Theses and Dissertations | 1. Thesis and Dissertation Collection, all items

1975

The development of planning, programming, and budgeting system in the Royal Thai Armed Forces.

Thiamthat, Medhi

http://hdl.handle.net/10945/20820

THE DEVELOPMENT OF PLANNING, PROGRAMMING, AND BUDGETING SYSTEM IN THE ROYAL THAI ARMED FORCES

Medhi Thiamthat

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

THE DEVELOPMENT OF PLANNING,
PROGRAMMING AND BUDGETING SYSTEM
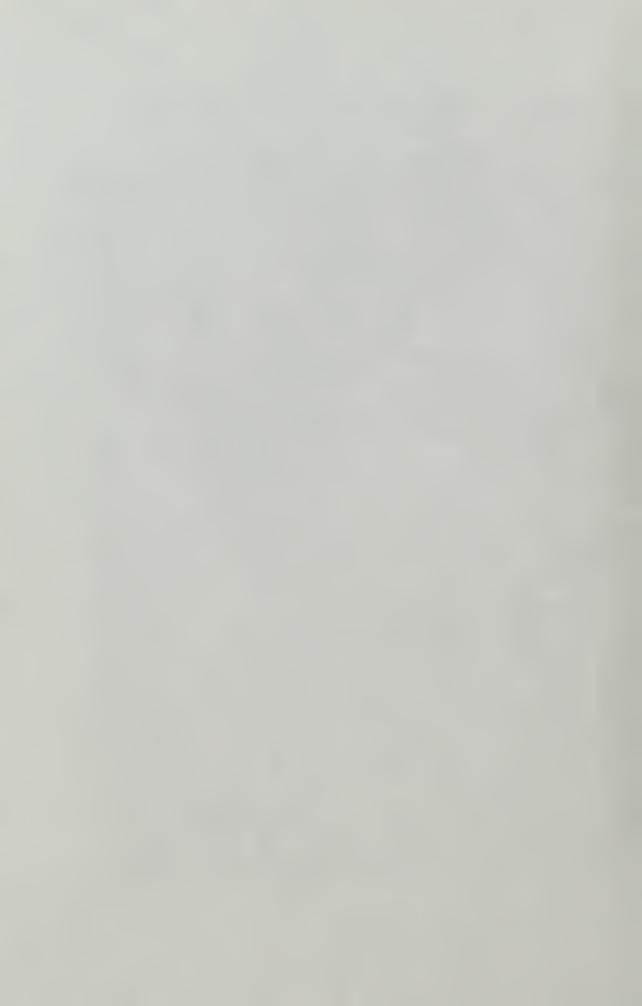IN THE ROYAL THAI ARMED FORCES

by

Medhi Thiamthat

September 1975

Thesis Advisors: William A. Campbell
            John W. Creighton

Approved for public release; distribution unlimited.

T 169655

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) The Development of Planning, Programming and Budgeting System in the Royal Thai Armed Forces		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis; September 1975
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Medhi Thiamthat		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, Californai 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		12. REPORT DATE September 1975
		13. NUMBER OF PAGES 118
14. MONITORING AGENCY NAME & ADDRESS(If different from Controlling Office) Naval Postgraduate School Monterey, California 93940		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The Planning, Programming, and Budgeting System was developed to facilitate budgeting in terms of military forces and weapon systems instead of the resource categories of military personnel, procurement, operation and maintenance, research, and construction. Costs were to be decided for the lifetime of a system, not just for the budget year. The planning and programming phases of PPBS have enabled the Secretary of Defense to see major force and support issued and have helped him to make effectively his decision. The

Thai Ministry of Defense has attempted in many ways to develop the Royal Thai Armed Forces PPBS by choosing the U. S. system as a model for development of the Thai system and adapting it to fit the Thai needs. Today, the RTARF PPBS progresses slowly and the system is still unable to be put into operation because of many barriers.

The Development of Planning, Programming,
and
Budgeting System in the Royal Thai Armed Forces

by

Medhi Thiamthat
Lieutenant Commander, Royal Thai Navy
B. Acc., Chulalongkorn University, 1957
M. Acc., The University of Georgia, 1969

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN OPERATIONS RESEARCH

from the

NAVAL POSTGRADUATE SCHOOL
September 1975

ABSTRACT

The Planning, Programming, and Budgeting System was
developed to facilitate budgeting in terms of military forces
and weapon systems instead of the resource categories of mili-
tary personnel, procurement, operation and maintenance,
research, and construction. Costs were to be decided for the
lifetime of a system, not just for the budget year. The plan-
ning and programming phases of PPBS have enabled the Secretary
of Defense to see major force and support issues and have
helped him to make effectively his decision. The Thai Minis-
try of Defense has attempted in many ways to develop the Royal
Thai Armed Forces PPBS by choosing the U. S. system as a model
for development of the Thai system and adapting it to fit the
Thai needs. Today, the RTARF PPBS progresses slowly and the
system is still unable to be put into operation because of
many barriers.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I.   INTRODUCTION

A.   BACKGROUND

The development of effective resource management systems is essential for the achievement of a satisfactory military program. Since resources appropriated for national security each year are limited, they must be efficiently allocated. National defense problems are economic problems. The nation's resources are scarce and these resources must be used to achieve many objectives of the nation and its individual citizens: national security, a high standard of living, public health, welfare and education, and so on. The more efficient the use of resources for national security, the more resources the nation can have for other purposes. Planning, programming, and budgeting together constitute a system by which the objectives and resources, and the interrelations among them, are taken into account to accomplish a coherent and comprehensive program of action for the government as a whole. Program budgeting involves the use of techniques that facilitate explicit consideration of the pursuit of policy objectives in terms of their economic costs, both for the present and the future. To be more specific, no government, whatever its resources, can avoid the need for compromises among various objectives.

The task of arranging the essential compromises among various objectives is the function of planning, programming, and budgeting. To make those compromises, it is essential

that the various government activities be transformed into terms of a common denominator, the money. For example, it is difficult to compare the relative merits of an additional infantry division or a hospital. It is often easier to compare the relative merits of spending an additional one thousand million bahts (equivalent to fifty million U. S. dollars) in one direction or the other. In comparison, it seems essential to find out how much an additional thousand bahts will add to military strength and how much to the hospital services. While defense and public health cannot be measured in simple quantitative terms, quantitative information can throw light on the consequences of spending money in various directions.

There are many ways in which money can be spent on defense and public health. To make rational comparisons, each major activity must be divided into meaningful subactivities. Modern defense, at least, requires considerations in terms of strategic forces and limited war forces. Public health must be divided into development of health resources, prevention and control of health problems, provision of health services, and general support. Major programs should be considered in terms of subprograms, and at the end of the scale one reaches the manpower, materiel, and supplies used by the government in support of these activities. Such considerations and calculations should lead to the concept of resources (money) used in optimal or preferred ways to achieve policy objectives.

All budgeting is essentially a matter of preparing for the future, but modern budgeting involves long-range projections into a highly uncertain future. The government can determine its policies most effectively if it selects rationally among alternative courses of action, with as full knowledge as possible of the implications of those alternatives.

The need for choice occurs as result of scarce resources, and a fundamental concept is that rational choice is better than irrational choice. The intelligent government must choose not only among various courses of government activity, but also between the government's total program and the private sector of the economy. The primary purpose of program budgeting is to facilitate the making of these difficult choices. Planning, programming, and budgeting focus on the process of comparison and coordination, which involves [Reference 1]:

1. Appraisals and comparisons of various government activities in terms of their contributions to national objectives;

2. Determination of how objectives can be attained with minimum expenditure of resources;

3. Projection of government activities over an adequate time horizon;

4. Comparison of the relative contributions of private and public activities to national objectives; and

5. Revisions of objectives, programs, and budgets in the light of experience and changing circumstances.

These operations are inherent in any planning, program-
ming, and budgetary process. Program budgeting involves more
explicit recognition of the need to perform them than has
been traditional. It also involves the application of new
analytical techniques as an aid to the exercise of the human
judgment on which choices must ultimately rest.

It is apparent from this statement of the budgetary prob-
lem that the traditional distinction between policy making
and budgeting, or between setting of goals and deciding on how
to attain them, is inaccurate and misleading. While the
government can have a general desire and intention to defend
the country, it cannot have a defense objective that is opera-
tionally meaningful until it is aware of the specific military
implications of devoting resources to defense. As a part of
that awareness, it should know the consequences of using
defense resources in alternative ways. The question of allo-
cative efficiency is thus intimately bound to the question of
the determination of goals. An adequate programming system
must serve both purposes.

B. STATEMENT OF THE PROBLEMS

To help understand the need for developing the Thai
financial management system, problems of the existing system
are outlined as follows:

1. The Royal Thai Armed Forces (RTARF) budget formulation
procedures are antiquated. The budgetary process seems to
include haggling and bargaining. The resulting budget as it
is, is a one-line, lump sum request to Parliament for funds.

There is little recognizable relationship between plans and
supporting budgets. The programming function does not exist.

2. New plans do not consider all alternatives in rela-
tion to cost and benefit terms. Decisions made at top levels
of the RTARF are at best subjective judgments based on little
factual information about their impact from a total resource
standpoint.

3. The RTARF decision process does not cut across all
the functional lines.

4. The problem is further complicated after the Parlia-
ment appropriates the funds. The Ministry of Defense (MOD)
allocation process follows a percentage basis determined by
what past years per cent of funds allocated to the individual
services has been.

5. Military planning is accomplished in terms of forces
and major weapon systems determined as many as ten years in
advance. On the contrary, budgeting in terms of appropriation
categories acceptable to the Parliament is planned only one
year ahead.

6. Military planning and budgeting are not compatible.
The costs of the developed plans have always been much greater
than the amount approved by the Parliament since the planners
performed planning with little regard to budget constraint.
Actually, the order of priority of activities, weapon system,
and forces is the responsibility of each service. This creates
competition and imbalances among the services.

7. When the plan and the budget have been presented to
the Minister of Defense for budget review and the money

requested exceeded appropriation, he would cut the military programs. Most forces and weapon systems have been decided without cost-benefit analysis among alternatives. This kind of decision often has led to overcommitment and inefficient resource allocation.

8. The budget has failed to provide the detailed information required to relate costs of weapons to their military effectiveness. It does not disclose the full-time spectrum of proposed programs since its own horizon is generally limited to one year.

9. The budget has also failed to furnish, on a systematic basis, sound cost data on the individual weapon systems and force units for any period beyond the budget year. Without this information, decision-makers lack a basis for deciding the relative costs and military worth of alternative choices.

An understanding of the above problem is necessary to justify why the RTARF needs a new financial management system as an important tool for the decision-makers. The decision-making process needs to be strengthened by establishing a bridge between the existing independent "planning" and "budgeting" systems, thereby closing the gap between them.

C. PURPOSE OF STUDY

The purpose of this thesis is to investigate how the Royal Thai Armed Forces planning, programming, and budgeting system was developed. This thesis also identifies problems in the Thai PPBS development, and suggests solutions to those problems. Systems analysis as an important tool of PPBS is discussed.

13

II. A STUDY OF UNITED STATES PLANNING, PROGRAMMING, AND BUDGETING SYSTEMS

The purpose of this chapter is to provide understanding of the United States Planning, Programming, and Budgeting System (PPBS) upon which the Thai system is based, so that the reader can follow the Thai PPBS easier in the next chapter. The United States system was chosen as the model for development of the Thai system because the United States had developed its system ten years ahead of Thailand's, and during those ten years, much progress was made. It is important to try to adapt it to fit the Thai needs. This transfer of existing technology should yield several benefits to the Thais:

1. It can increase the productivity and reduce the cost of the Thai government's development effort. By applying the technology that has been previously developed, the government can avoid duplication of effort and improve efficiency.

2. It can increase the probability of selecting the best technology for the tasks.

3. It can shorten the time between the development of a system and its first successful application.

4. It can help avoid errors or mistakes that have been made by the United States during development of the system.

A. THE ESSENTIAL IDEAS BEHIND THE UNITED STATES PLANNING, PROGRAMMING AND BUDGETING SYSTEM

The Secretary of Defense (SECDEF) must insure that the interests of the nation take precedence over the special

14

institutional interests of the military services, the defense contractors, the project managers, the scientists, the localities, and the other groups that make up or depend on the Defense Department.

PPBS was developed and implemented in the Department of Defense (DOD) in the early 1960's in order to provide the Secretary of Defense the information and management tools for shaping defense programs in the national interest. The basic idea behind PPBS is that decision-making should be based on explicit criteria in the national interest as opposed to decision-making by compromise among various institutional and parochial interests.

Alain C. Enthoven and K. Wayne Smith [Ref. 2] have discussed six interesting basic ideas behind PPBS as follows:

1.   Development of Publicly Defensible Criteria

The first fundamental idea of PPBS is to develop publicly defensible criteria, openly and thoroughly debated by all interested parties, that can be used by the SECDEF as measures of the national need and adequacy of defense programs.

Initially, such criteria may be very crude but one has to start somewhere, and the value of even rough statements of such criteria is that it generates a debate on better ways of defining the national interest in defense programs.

2.   Explicit Consideration of Alternatives at the
     Top Decision Level

The second basic idea underlying PPBS is the explicit consideration of alternatives at the top decision level. If the Secretary of Defense is to shape the defense program in

the national interest, he must also be able to choose from among a number of alternatives. Each alternative should be a balanced, feasible solution to the problem. Choosing among real alternatives is the only way the Secretary of Defense can effectively translate his judgments about national security matters into policy. Thus, he and the President can choose a defense budget in full awareness of its implications for the military posture and in light of information on whether extra spending would bring military benefits which justify the sacrifice of other competing public programs. This search for alternatives, and the explicit consideration by the top level decision-makers is an important part of the defense decision-making process.

   3.   Consideration of Needs and Costs Together

      The third basic idea underlying PPBS is to consider needs and costs together. This requires identifying the costs of accomplishing major military missions such as strategic retaliation, strategic mobility, and anti-submarine warfare rather than identifying costs by object classes of expenditures, such as personnel, operations and maintenance, procurement, and the like. Military needs and costs must be considered together. Ends and means interact. What is worth trying to do depends in large part on how much it costs to do it. If an administration is not willing to meet the costs implied by its foreign policy objectives, then it should revise its objectives to bring them into line with the budgets it is willing to provide. Otherwise, the consequence will be

an imbalance between objectives and forces, and an imbalance among programs designed to support the actual forces. In other words, strategy decisions and budget decisions cannot be sensibly separated.

4. Forward Force and Financial Plan

The fourth major idea behind PPBS is that of a forward force and financial plan, i.e., a plan which projects into the future the foreseeable implications of current decisions. Such a plan is not meant to be an inflexible blueprint for the future. Rather it is a projection of the implications of past decisions, a set of official planning assumptions, and a point of departure in the continuing search for improvements. Having such a plan forces the decision-maker to look into the future to the time when today's decisions will have their most important effects.

The practical result of tying together needs and costs and of having a forward force and financial plan is the Five-Year Defense Plan (FYDP), one of the basic management tools in DOD which makes PPBS work. The FYDP is a series of force tables which show an eight-year projection of forces and a five-year projection of costs displayed in mission-oriented programs. The FYDP not only ties together force and financial planning but provides a vehicle for insuring that the process of changing the approved program is orderly and that the changes are accurately recorded. The FYDP is also the official source of planning assumptions. It is an authoritative record of what the Secretary of Defense has tentatively approved for purpose of force and financial planning. In other words, all

interested parties within DOD know how many and what kinds of divisions, squadrons, ships, etc., have been authorized and how many men and how much money it will take to support them. By clearly relating forces to costs and to budget, the FYDP gives financial planning within DOD the same output orientation as force planning. This is a major improvement over the pre-1961 system. At that time, force planning was long range, expressed in terms of combat units, and performed mainly by military planners in the Joint Staff and the services. Financial planning was short range, expressed in terms of objects of expenditure, and performed mainly by civilians in the Comptroller organization. There was little integration of the two. Given this situation, it is not surprising that there were serious imbalances, such as divisions without equipment and ammunitions or the airlift to move them, and aircraft without spare parts. With the FYDP, there is a common planning base in the literally hundreds of separate agencies and offices in DOD. The left hand can know what the right hand does and plans to do. Logistic planners can see how many and what kinds of divisions are planned and budget for ammunition accordingly. Each service can see what is planned for the other and thus better determine what forces are needed for common missions. The air force, for example, can see how large an army is projected and plan its airlift capability accordingly. Furthermore, with a common set of planning assumptions, the wastefulness associated with starting or continuing a great many individual service projects

18

which will all do the same job can be and has been reduced.
By providing this common planning base and tying together
forces and costs by major mission area over time, the FYDP
has contributed significantly to the acquisition of more
balanced and better supported forces.

The very characteristics of effective management tools
such as the FYDP have led to much of the political opposition
to PPBS. Since the FYDP does constitute an official record
or program decisions and tentative planning assumptions, it
requires the Secretary to make explicit controversial de-
cisions. This is a quite different procedure from the pre-
1961 method of simply setting a one-year budget ceiling,
without nailing down choices between competing programs. One-
year ceilings usually led to starting and continuing more and
larger programs than the budget could adequately finance,
since the long-term financial implications of decisions were
not explicitly considered and competing claims for resources
did not have to meet head on. This, in turn, led the services
to hold onto their prestige items (divisions, wings, and ships)
at the expense of less glamorous--but essential--support items,
causing a progressive deterioration in the real effectiveness
and combat readiness of the forces. In the short run, however,
a simple budget ceiling generates much less political heat
than a system which requires explicit, long-range program
decisions.

5. Active Use of Analytical Staff and the Regular
   Use of Analysis

The fifth important idea of PPBS is the active use
of analytical staff at the top policy-making level and the
regular use of analysis as an aid to judgment. Most large
organizations, governmental or otherwise, have some kind of
analytical or planning staff somewhere in the organizational
structure. Often, these groups are little more than "window
dressing." They are not active contributors to the decision-
making process. They do not report directly to the top
decision-makers nor do they receive frequent guidance from
them as to what studies to undertake for what reasons. More
often than not, they do studies that are not read, on subjects
that are not important. Their continued existence depends on
remaining non-controversial, and most of them excel in this
regard. In the United States DOD, the active use of analytical
staff at the top policy-making levels has been from the
beginning, a key element of the PPBS. The staff that is
referred to is the Systems Analysis Office.

The Systems Analysis Office was established to gather
and analyze information relevant to forces and other major
requirements from these different areas and to help the
Secretary of Defense fit the pieces together. In other words,
it integrated the cost, effectiveness, and requirement data
and the recommendations of the services and Joint Chiefs of
Staff (JCS) in such a way that the Secretary could understand
what capabilities he was buying, at what cost, and how they

related to overall defense needs. It regularly provided the Secretary with the staff assistance necessary to identify and analyze alternative levels and mixes of forces so that his choices were not limited to those proposed by the services and the JCS.

The Systems Analysis Office reported directly to the Secretary of Defense and undertook studies directly at his request. These studies were then formally reviewed by all interested parties and, upon completion of the review, formed a major input to the decision-making process. The purpose of such studies was not primarily to determine the "best" solution, even given a certain set of assumptions. Rather, their purpose was to sort out which assumptions were important and show how they affected the outcome, so that judgment could be focused on the really crucial issues. In short, the purpose of analysis as used in DOD was to illuminate and inform judgment, not to replace it.

6. The Necessity for Open and Explicit Analysis

The final basic idea of PPBS is that analysis should be open and explicit. That is, each analysis should be made available to all interested parties so that they can see what assumptions were used and so they can retrace the steps leading to the conclusions. Open and explicit analysis is the best protection against persistence in error and against reaching conclusions on the basis of hidden or rigged assumptions. It also helps to build confidence in the results of an analysis. All calculations, assumptions, empirical data,

and judgments should be described in an analysis in such a way that they can be checked, tested, debated, discussed, and possibly refuted. Adversary proceedings are the best stimulant to analytical progress. More importantly, analysis should be tested, checked, and debated by all interested parties. Analysis should not be believed simply because it is an analysis. It is the method, not the authority, of analysis that is important.

One of the most significant achievements of PPBS in DOD has been the stimulation of intense but orderly debate over the relevant program issues, not just over arbitrary allocations of budget ceilings. Indeed, in a very meaning- ful, practical sense, PPBS is a set of ground rules for con- structive debate. This aspect of the system is especially interesting, in view of the charges that it has "shut off discussion" and "frozen the military out of decisions." In fact, one of the most successful aspects of PPBS has been the focusing of the inevitable conflict and debate within DOD onto a much more constructive and objective level than before.

Open and explicit analysis, reviewed and commented on by all interested parties, is fundamental to the workings of PPBS in the Pentagon. The analyses underlying the Secretary's decisions are circulated for comment and review by all interested parties. These comments go directly to the Secretary. The procedures are designed so that the Secretary can hear all sides, so that no one has a monoply on the information going to him. They help to insure that all

important assumptions are made explicit, that all interested parties are given "due process," and that all opinions are fully considered.

How the System Works

In summary, decision-making based on explicit criteria of the national interest; the consideration of real alternatives; evaluating needs and costs together; a forward force and financial plan; the active use of analytical staff at the top policy-making level, and the regular use of analysis as an aid to judgment; the concept of open and explicit analysis--these are fundamental ideas upon which PPBS was developed and operates in DOD. These ideas are clearly reflected in principal management tools that have made PPBS work. They are also reflected in the procedures established for debate and review. It is these underlying ideas and not the specific tools and procedures that are fundamental. There is nothing easy or mechanical about PPBS. It is not a closed, rigid, or perfected system. In its broadest sense, it is an approach to management--an approach that has helped to channel the initiative, drive, imagination, dedication, hard work and judgment of the civilian and military leaders in DOD along more rational and objective lines.

PPBS has provided the Secretary of Defense with more useful information and meaningful alternatives than he had before. It has provided an effective framework for making and carrying out major program decisions in an informed and orderly way. By unifying programming and budgeting, it has

closed the "gap" between force and financial planning. By
providing an official force plan, it has given the planners
and analysts in the whole department a firm foundation for
their planning and a solid point of departure for their
analyses. It has led to a major improvement in the quality
and relevance of debate over requirements. Under PPBS, the
idea of open and explicit analysis, reviewed and commented
on by all interested parties has been widely accepted. The
systematic search for real alternatives to prevent the
Secretary from being the prisoner of a single staff solution
has become the rule rather than the exception. The considera-
tion of requirements on an overall mission basis, rather than
on the basis of a single service, has led to the elimination
of much unnecessary duplication in research and development
projects. Most importantly, PPBS has helped to give the
Secretary of Defense the information and analyses to see what
the major alternatives are from a department-wide point of
view and to help him to make a reasoned choice among them.
It has given him a way to structure debate over defense
issued along objective lines. In an organization as large
and diverse as the Department of Defense, where many issues
are highly emotional, where the "facts" are hard to pin down,
and where parochial and institutional interests constantly
compete with the national interest, these are not small
accomplishments.

B. UNITED STATES DEPARTMENT OF DEFENSE BUDGETING

BEFORE 1961

Prior to 1961, the Secretary of Defense lacked the tools
to manage the overall effort on a truly unified basis, so he
had to resort to what might be considered as the "budget
ceiling" approach. By this approach, the President would
state the general level of National Defense expenditures which
he believed was appropriate for world situations and U.S.
overall economic and fiscal policies. The Secretary of
Defense, by some means, would allocate the Defense budget
among the three military services. Each service would then
prepare and submit its basic requests, dividing its ceiling
among its own functions, units, and activities. Each service
would also present additional requests, which could not be
included in the given ceiling, in what was often referred to
as "addendum" budget, "B" list. All the budget submissions
were reviewed together by the Office of the Secretary of
Defense in an effort to achieve balance. This was the tradi-
tional method of preparing the Defense budget. It was realized
long ago that this was a rather inefficient method. Under
this method, each service had a tendency to exercise its own
priorities, favoring its own unique missions to the detriment
of the joint missions, attempting very hard to lay the founda-
tion for an increased share of the budget in future years by
focusing on attractive new weapon systems, and defending the
overall size of its own forces even at the cost of readiness.
The final result was imbalance in effective military forces

despite the fact that the decisions were made by patriotic high ranking officers, and by dedicated civilians as well, who were convinced that they were behaving to the best interests of the nation as well as to their own service. For instance, the Army utilized its scarce resources to maintain the number of its divisions, although this meant that they lacked equipment and supplies to fight for more than a few weeks. The Navy gave overriding priority to its own nuclear attack forces--notably the aircraft carriers--while its anti-submarine warfare capability was relatively neglected and its escort capability atrophied. The Air Force gave overriding priority to the strategic retaliatory bombers and missiles, starving the tactical air units required to support the Army ground operations and the airlift units required to move the limited war forces quickly to far-off trouble spots.

Moreover, since attention was concentrated on only the next year's budget, the services always tended to propose large numbers of "new starts," the full cost dimensions of which would only become apparent in subsequent years. Another unsatisfactory point in this method of attempting to exercise control and direction of defense effort through the annual budget was the almost complete separation between budgeting and military planning as stated by Charles J. Hitch [Ref. 3] as follows:

1. These critical important functions were performed by two different groups of people--the planning by military planners and the budgeting by civilian secretaries and the comptroller organizations.

2. Budget control was exercised by the Secretary of Defense but planning remained essentially in the Services. It was not until 1955-56 that the first Joint Strategic Objectives Plan (JSOP) projecting the requirements for major forces some four to five years into the future, was prepared by the Joint Chiefs of Staff organization, but the early JSOP was essentially a "pasting together" of unilaterally developed Service plans.

3. Where as the planning horizon extended four or more years into the future, the budget was projected only one year ahead, although it was clear to all involved that the lead time from the start of a weapon development to the equipping of the forces ranged from five to ten years, depending on the character of the particular development effort.

4. Planning was performed in terms of missions, weapon systems, and military units or forces--the "outputs" of the Defense Department; budgeting, on the other hand, was done in terms of such "inputs" or intermediate products as personnel, operation and maintenance, procurement, construction, etc., and there was little or no machinery for translating one into the other.

5. Budgeting, however crudely, faced up to fiscal realities. The planning was fiscally unrealistic and, therefore, of little help to the decision-makers. The total implicit budget costs of the unilateral Service plans or the Joint Strategic Objective Plans always far exceeded any budget that any Secretary of Defense or administration was willing to request of the Congress.

27

6. Military requirements tended to be stated in absolute terms, without reference to their costs; but the military effectiveness or military worth of any given weapons system cannot logically be considered in isolation. It must be considered in relation to its cost, and in a world in which resources are limited, to the alternative uses to which resources can be put. Military requirements are meaningful only in terms of benefits to be gained in relation to their cost. Accordingly, resource costs and military worth have to be scrutinized together.

As a consequence, the Secretary of Defense each year was in a difficult position to judge on forces and programs without enough information and all within the few weeks allocated to his budget review. In addition, every year the plans and programs of each of the Services had to be cut back severely to fit the budget ceiling, by program cancellations, stretch-outs, or postponements--but only for that year. Beyond the budget year, unrealistic plans continued to burgeon. Perhaps next year the ceiling would be higher.

C.   UNITED STATES DOD BUDGETING AFTER 1961

After Robert S. McNamara became the Secretary of Defense, he tried to take the initiative in the planning and direction of the Defense program. He expressed his managerial philosophy as a desire to manage the Defense effort in terms of meaning-fulprogram entities, of "output" like the B-52 force, the POLARIS force, the Army Airborne Division forces, etc., which were dependent upon the inputs of equipment, personnel,

supplies, facilities and funding, regardless of the appro-
priation account. He wanted to know the cost, for example,
of a B-52 wing, in order to optimize the allocation of
resources--he would have to know not only the cost of equip-
ping the wing but also the cost of manning and operating it
for its lifetime or at least for a reasonable period of years
in the future. Then he was able to evaluate the cost and
effectiveness of a B-52 wing as compared with other alterna-
tive courses of action. He wanted to know the total costs
of the forces assigned to each of the major missions--the
costs of the strategic offensive forces, the continental
defense forces, the general purpose forces, etc. As
General Maxwell Taylor [Ref. 4] had pointed out to a con-
gressional committee in 1960:

> ... If we are called upon to fight, we will not be
> interested in the services as such. We will be inter-
> ested rather in task forces, those combinations of
> Army, Navy, and Air Force which are functional in
> nature, such as the atomic retaliatory forces, overseas
> deployments, continental air defense forces, limited
> war expeditionary forces, and the like. But the point
> is that we do not keep our budget in these terms.
> Hence, it is not an exaggeration to say that we do not
> know what kind and how much defense we are buying with
> any specific budget.

Charles J. Hitch, the Assistant Secretary of Defense of
that time, also had the same idea. He and the Secretary of
Defense, Robert S. McNamara, both recognized that DOD
financial management must serve many purposes. It must pro-
duce a budget in a form acceptable to the Congress. It must
set aside the funds in the same fashion in which they were
appropriated. It must give the managers at all levels in

the Defense Establishment the financial information needed
to do their particular jobs in an effective and efficient
way. It must provide the financial information needed by
other agencies of the Government--the Bureau of the Budget,
the Treasury, and the General Accounting Office.

Both Mr. Hitch and Mr. McNamara realized that the fin-
ancial management system must also produce the information
required by top Defense management to make the very vital
decisions, especially on the major forces and weapons sys-
tems required to perform the principal missions of the Defense
Establishment. They both recognized that the financial
management system that had existed for years could not furnish
the needed information in the form desired. Therefore, a new
function called "programming" would have to be included in the
financial management system. The new system was developed
and its product, the defense budget, submitted to the Congress
in January 1962. This was the first budget to be prepared
wholly under the McNamara administration.

Since the defense planning function and budget function
were already well organized, the function of programming was
only to span the gap between the two. Theoretically, it was
possible to recast both the planning and budget structures
in terms of major programs related to missions. As a matter
of fact, initially only the defense planning operation was
adapted to the program structure. The budget structure should
be similarly realigned. The budget might then take a form
such as shown in Table I.

Table I. Possible Format of National Security Budget

Programs and Sub-programs	Proposed force composition (No. military units, where applicable)					Expenditures implied by proposed programs			
	'60	'61	...	'64,	'65	'60	'61	...'64	'65
Deterrence of Fighting of All-Out War									
Nuclear Striking Force (AF, Navy)									
B-47									
B-52									
Atlas									
Polaris									
.									
etc.									
Active Defense (Army, Navy, AF)									
Early Warning									
Interceptors									
F-102									
Bomarc									
.									
etc.									
Local Defense									
Nike									
.									
etc.									
Passive Defense (OCDM)									
Dispersal									
Shelters, Evacuation									
Recuperation Planning									
Deterrence or Fighting of Limited Wars									
Ground Forces (Army, Marine)									
Sea Power (Navy)									
Tactical Air (AF, Navy)									
Transport, Air & Sea (AF, Navy)									
Military Aid to Other Countries (Mutual Security)									
Reserves for Mobilization									
Military Units (Army, Navy, AF)									
Defense Production (OCDM)									
Research and Development (AEC, AF, Army, Navy)									
Exploratory									
Weapon Systems									
General Administration									
Miscellaneous									

Source: C. J. Hitch and R. N. McNamara, "The Economics of Defense in the Nuclear Age," p. 56, Atheneum, 1974.

The existing budget structure still serves some useful purposes. It is prepared, essentially, in terms of resources categories: (1) Military Personnel; (2) Operation and Maintenance; (3) Procurement; (4) Research, Development, Test and Evaluation, (5) Military Construction. This is the type of structure by which the Defense Department manages its resources. While the military planning and the formulation of programs should logically be prepared in terms of missions and forces, the Department of Defense must be managed not only in those terms but also in terms of resources. For instance, the Department of Defense must manage the acquisition, training, and careers of military personnel; the operation of bases and facilities; the procurement of aircraft, missiles, ships, and tanks; the research and development program; and the construction of airfields, missile sites, quarters, and other additions to the existing physical plant. The present budget structure facilitates the estimation of resource costs as well as the execution of the resource programs. This division of the budget by broad input or resource categories is also flexible for the program adjustments that are inevitably needed in the course of the budget year. Program priorities and requirements tend to change even in the course of a single year because of international developments, technological breakthroughs (or disappointments), and all sorts of other events. It is significant not to freeze programs in appropriation bills.

The Congress, especially the Appropriations Committees, prefer the existing Defense budget system since they have been working with it for a long time and have developed an historical base for decision-making on the budget requests. It is much easier for them to review a budget request of $7.5 billion for pay and allowances for 1,000,000 active duty Army personnel than to review a request of $25 billion for the major program "General Purpose Forces." According to the law, the President of the United States can present his budget in any form he likes, but the Congress decides how the funds will be appropriated and in turn, this determines how the funds will be set aside. It is clear that the advantages of the existing budget structure far exceed the disadvantages, which are principally mechanical, namely, the need to transform program categories into appropriation categories and vice versa. However, the modern high-speed computers are well designed to overcome the disadvantage. Therefore, the Department of Defense decided to leave the budget structure undisturbed and to provide a bridge between planning and budgeting with the new programming function. This brought about a three-phase operation: planning-programming-budgeting.

1. Planning Phase

The first phase is military planning and requirements determination. The JCS and the planners in the military departments play a very important role in this phase. What is looked for in this stage are not just requirement studies in the traditional sense, but military-economic studies which compare

alternative ways of achieving national security objectives, and which determine the one that contributes most for a given cost, or accomplishes a given objective at the minimum cost. These are called "cost-effectiveness studies" or "systems analyses."

At present, the planning-programming-budgeting process starts with the Joint Strategic Objective Plan prepared by the JCS with the assistance of military planners in the Services. The format of this plan has been modified to bring it into harmony with the new program structure. Therefore, the Joint Chiefs of Staff have the opportunity to suggest to the Secretary of Defense on a comprehensive basis the military forces and programs which should be supported over the next five to eight years. In the spring of each year, the Secretary of Defense reviews these forces and programs recommended by the Joint Chiefs of Staff, makes preliminary decisions, and provides to the military departments "a tentative guidance" to serve as a basis for the preparation of their formal change proposals to the official five-year program. The principal cost-effectiveness studies must be completed at about the same time in order to give the Secretary of Defense and his principal advisors detailed information on the most crucial and difficult problems.

The first list of required studies was developed by Secretary McNamara. They were assigned to the JCS, the military departments, and various elements of the Office of the Secretary of Defense. For example, one study was concerned

with the problem of how many strategic bombers and missiles were needed during the next decade to destroy priority targets. Another dealt with the investigation of requirement for airlift and sealift capabilities to meet various contingency war plans and the most economical means of providing that lift. Still another involved the cost-effectiveness of: (a) renewing existing items of ground equipment, (b) replacing them with new equipment of the assembly lines, and (c) expediting the development of still better equipment. The Secretary of Defense still creates many of these requirement studies. Others are created by the Joint Chiefs of Staff, the military departments, and various elements of the Secretary's staff.

2. Programming Phase

The second phase is the initial development of the program structure. All the myriad programs must be sorted and regrouped into meaningful program elements, i.e., integrated combinations of men, equipment, and installations, whose effectiveness could be related to the national security objectives. For example, the B-52 bomber force, together with all the supplies, weapons, and manpower required to make it effective, is one such program element. Other examples are Attack Carriers, F-4 Fighter Wings, and Recruit Training. Wherever possible, program elements are measured in physical terms such as numbers of aircraft per wing, numbers of operational missiles on launchers, numbers of active ships, and so forth as well as in financial terms, thus including both "input" and "output"-- costs and benefits. Some program elements such as research projects can only be measured in terms of inputs.

Costs are measured in terms of "total obligational authority" -- the amount required to finance the program element in a given year, regardless of when the funds are appropriated by the Congress, obligated, placed on contract, or spent. It would be preferable, however, to measure the costs of the program in terms of resources consumed, and from the viewpoint of planning and decision-making. People are far more interested in the full, completed cost of a program, than in the precise phasing of the costs. To tie in with the "branch point" at which critical decision must be made, program costs are subdivided into three categories: development costs, investment costs, and operating costs. Since the cost of developing a new weapon system to the point where it could be produced and deployed involves a large expense, a determination to go ahead with full-scale development is, in itself, a major decision. Therefore, it is better to know in advance the likely cost of completing any major weapon development. In addition, it is important to know the investment cost of providing initial equipment for the proposed forces, as well as the operating costs of those forces each year. In many cases, for example, the five-year operating cost of a B-52 wing are about equal to the initial equipment costs, and in some few cases such as an infantry division, the operating costs for just one year are usually greater than the initial investment costs. To facilitate the conversion of program costs to the budget cost categories and vice versa, it is necessary to break down the costs of each program element by the various budget appropriation accounts under which it is financed. Operating costs

actually are included in the "Military Personnel" and "Opera-
tion and Maintenance" appropriations, and where operating
spares are involved in the "Procurement" accounts as well.
Initial investment costs usually are included in the "Procure-
ment" and "Military Construction" appropriations.

There are more than 1,000 program elements divided
among the major programs. Where military forces are involved,
they are projected eight years ahead in order to give the
necessary lead time for the determination of the procurement
programs. All other program data, both physical and financial,
are projected five years ahead. The entire program is subject
to continual change and is, therefore, updated every other
month. Whenever there is a change in the cost of a program
element in the current fiscal year, it must also be reflected
in the budget for the same year and vice versa. The next task
is to associate the program elements to the major missions of
the Defense Department. The objective is to assemble associated
groups of program elements that, for decision purposes, should
be examined together, either because they support one another,
or because they are close substitutes. The unifying principle
underlying each major program is a common mission or set of
purposes for the elements involved. The following ten major
programs currently comprise the program structure of the U. S.
Department of Defense [Ref. 5]:

    Program 1 -- Strategic Forces
    Program 2 -- General Purpose Forces
    Program 3 -- Intelligence and Communication
    Program 4 -- Airlift/Sealift
    Program 5 -- Guard and Reserve Forces

```
Program  6 -- Research and Development
Program  7 -- Central Supply and Maintenance
Program  8 -- Training, Medical, and Other General
                 Personnel Activities
Program  9 -- Administration and Associated Activities
Program 10 -- Support of Other Nations
```

Program 1 -- Strategic Forces

consists of Strategic Offensive, Strategic Defensive, and Civil Defense (as major subdivisions). Includes command organizations associated with these forces.

Program 2 -- General Purpose Forces

consists of force-oriented program elements other than those in Program 1, including the command organizations associated with these forces, the logistics organizations organic to these forces, and the related logistic and support units which are deployed or deployable as constituent parts of military or naval forces and field organizations.

Program 3 -- Intelligence and Communications

consists of missions and activities directly related to combat forces, but not a part of any of the forces listed in Program 1 or 2 where independent decisions can be made. Includes resources for primarily national or centrally directed DOD objectives for intelligence and security, communications, and specialized missions such as weather service, aerospace rescue/recovery, and oceanography.

Program 4 -- Airlift/Sealift

consists of airlift, sealift and other transportation organizations both industrially-funded (IF) and nonindustrially

funded (NIF). Includes command, logistic and support units organic to these organizations.

Program 5 -- Guard and Reserve Forces

consists of National Guard and Reserve training units. Elements are arranged in program order to facilitate the relating of the Guard and Reserve training forces to the active forces.

Program 6 -- Research and Development

consists of all R&D activities which are not related items approved for procurement and deployment. The R&D costs related to operational systems will appear in appropriate elements in programs to which the weapons or support system may be identified.

Program 7 -- Central Supply and Maintenance

consists of supply and maintenance that is not organic to other program elements. Includes nondeployable supply depots and maintenance depots, both industrially-funded and non-industrially-funded.

Program 8 -- Training Medical and Other General Personnel
                Activities

consists of training, medical, and other activities associated with personnel. Excludes training specifically identified with another program element, and housing, subsistence, medical, recreational and similar costs that are organic to a program element such as base operations.

Program 9 -- Administration and Associated Activities

consists of resources for the administrative support of
departmental and major administrative headquarters, field
commands and administrative activities (not elsewhere accounted
for), construction support activities and miscellaneous
activities.

Program 10 -- Support of Other Nations

consists of elements identified in Military Assistance
Program (MAP) and Agency for International Development (AID)
programs and those resources assigned to elements related to
the MAP or supporting it.

3. Budgeting Phase

The third phase of the planning-programming-budgeting
process is the Budgeting Phase. It is worthwhile to emphasize
here that the programming review is not considered as a substi-
tute for the annual budget review. Rather, it is designed to
provide a Defense Department-approved program to serve as a
basis for the preparation of the annual budget as well as guid-
ance for future planning. In the budget review it is necessary
to go into greater detail for the first year of the Five-Year
Program on procurement lists, production schedules, lead times,
prices, status of funds, and all the other facets involved in
the preparation of an annual budget. As mentioned earlier,
the funds are managed in terms of the program structure.
Therefore, the annual budget represents a detailed analysis of
the financial requirements for the first annual increment of
the approved Five-Year Program.

In summary, the Secretary of Defense and his principal military and civilian advisors are equipped with a system which brings together at one place and at one time all the relevant information which is required to make sound decisions on the forward program and to control the execution of that program. Moreover, the Secretary of Defense and his advisors are also furnished with the necessary flexibility in the form of a program change control system. Since McNamara's time, the United States has had a comprehensive Defense Department-wide plan that extends more than one year into the future. It is a realistic and responsible one for programming not only the forces, but also the men, the equipment, supplies, installations, and dollars required to support them. Budgets are in balance with programs, programs with force requirements, force requirements with military missions, and military missions with national security objectives. The total budget dollars required by the plan for future years do not exceed the Secretary's responsible opinion of what is necessary and feasible.

The Secretary of Defense, with this management tool at his command, is now in a position to perform the responsibilities assigned to him by the National Security Act, namely, to exercise "direction, authority, and control over the Department of Defense," and without another major reorganization of the Defense Establishment.

D. THE PPB CYCLE

Inherent in the PPBS is an annual cycle of events leading to the appraisal of a DOD budget for inclusion in the President's annual budget. This cycle is called the calendar year PPB cycle. The PPB cycle is never constant; it changes every year to meet new requirements. An example of the 1973 PPB cycle is discussed as follows [Ref. 6]:

The PPB cycle started in May with the issuance by JCS of Volume I of the Joint Strategic Objectives Plan (JSOP) and ended with the completion of the Defense budget in December of the following year, a span of 19 months (Figure 1).

Volume I of JSOP was entitled Military Strategy and Force Planning Guidance. The section on strategy provided statements of the national security objective, derived military objectives, global and regional appraisals, and strategic concepts for the employment and support of forces. The force planning guidance, prepared for combat commands and the services, was directed to U. S. force capabilities and major contingencies.

The next step was the issuance, in September or early October, of the SECDEF's Strategy Guidance, now called the Defense Policy and Planning Guidance. It provided in one document the essential national security policies established or confirmed by the current Administration. The Policy and Planning Guidance elaborated on those policies in force planning terms. It discussed the missions and tasks the forces must be prepared to perform and the assumptions to be made in sizing forces and allocating resources. It was based on

1973 PLANNING * PROGRAMMING * BUDGETING

| 1972 | 1973 |
| MAY | SEPT - OCT | DEC | FEBRUARY | MAY | JULY - AUG | OCTOBER | NOV - DEC |

SECRETARY OF DEFENSE

J C S

MILITARY DEPARTMENTS & AGENCIES

JSOP = Joint Strategic Objectives Plan

R&C = Review & Comment

Figure 1.

43

JSOP Volume I, as amended to reflect decisions made by the President and the Secretary.

JCS followed in December with step three, which is JSOP Volume II, Analysis and Force Tabulations. It took into consideration the strategy guidance of Volume I, the recommendations of the services and the combat commands, and the policy and planning guidance of the Secretary of Defense. In nine books and eight annexes, it:

1. developed the major U. S. force requirements to execute the strategy for coping with global and regional threats,

2. recommended major U. S./Free World objective force levels within the criteria of reasonable attainability and prudent risk,

3. appraised the capabilities of major programmed forces to meet the threat and execute the strategy, and

4. recommended force tabulations for the mid-range period and for each fiscal year of the Five Year Defense Program.

The fourth step was the issuance, in February or early March, of SECDEF's Planning and Programming Guidance Memorandum. It was the Fiscal Guidance issued in combination with other important documents. One was an update of the policy and planning guidance issued earlier in the cycle. It governed all planning and programming from the date of its issuance until specifically amended or superseded by the Secretary. Another important enclosure was the Materiel Support Planning Guidance, formerly called the Logistic Guidance (Figure 2).

The issuance of the Fiscal Guidance gave the JCS, the Military

Departments, and the Defense Agencies the ceiling within which

they could prepare and submit the Joint Force Memorandum and

the Program Objective Memoranda.

As mentioned above, the Fiscal Guidance provides dollar

ceilings by fiscal year, by Service and Agency. Primarily for

illustrative purposes, it also distributes these dollars by

major mission and support categories. However, some totals are

not just for illustration. The Guidance FY1974-1978 places a

floor under spending for Strategic Forces and Support to Other

Nations and a floor and a ceiling around spending for Intelli-

gence and Security.

The fifth step was the submission in early May by JCS of

the Joint Force Memorandum (JFM). It provided the Secretary

with JCS recommendations in regard to fiscally constrained

major force and support levels. It included a summary of

analyses and an assessment of risks associated with the con-

strained forces as measured against the strategy and military

objectives of JSOP Volume I and Security's policy and planning

guidance. It covered the same eight years of the mid-range

planning period as the JSOP. It also highlighted major force

issues requiring decisions, including program costs and asso-

ciated manpower requirements.

Right on the heels of the JFM, each Military Department and

Defense Agency sent forward in late May its Program Objective

Memorandum (POM). The POM's provided a description of proposed

programs in terms of forces, procurement, manpower, and costs.

They also stated the rationale for proposing these programs, their readiness and capabilities to support the strategy, and an assessment of the risks involved.

The seventh step on the PPB cycle was the preparation at the Secretary of Defense level of the Issue Papers. Prepared in June and July, these documents analyzed the Service proposals in terms of their relation to (a) the policy and planning guidance, (b) the balance between force structure, modernization, and readiness, and (c) efficiency tradeoffs. They also defined the issues, listed the alternatives, and evaluated the capabilities and costs of those alternatives in terms of their ability to implement the missions of the Department of Defense. The Issue Papers were circulated to the JCS and the Services for comments concerning accuracy and completeness before being submitted for decision to the Secretary and Deputy Secretary.

The decisions made in the review of the Issue Papers were released late July in the form of tentative Program Decision Memoranda to the JCS, the Military Departments, and the Defense Agencies. After comments had been received and major issues discussed with the Joint Chiefs and the Secretaries of the Military Departments, the Program Decision Memoranda were amended, as necessary, and reissued in August as the final program guidance. The Department and Agencies then made the required changes in their Program Objective Memoranda summary tables so that the latter would now reflect the approved five-year defense program for each DOD component.

In early October the Military Departments and Defense
Agencies submitted the annual Budget Estimates for the dollars
needed to carry out the approved programs in the budget year.
The Program/Budget Decisions were released in late October
and November after review of those estimates by the budget
examiners of the Secretary of Defense and the Office of Manage-
ment and Budget (OMB). They were put in final form in December
after the Departments and Agencies had had an opportunity to
comment, and became part of the President's Budget, which went
to Congress in January.

The 1973 Planning-Programming-Budgeting Cycle, the PPB-
Programming Phase, and the Program/Budget Review Schedule for
Calendar Year 1973 are shown below in Figure 2 and Table II,
respectively.

PPB - PROGRAMMING PHASE

	FEBRUARY	MAY	JUNE - JULY	JULY - AUGUST

SECRETARY OF DEFENSE

PLANNING & PROGRAMMING GUIDANCE
- FORCE PLANNING
- FISCAL LEVELS
- MATERIEL

ISSUE PAPERS

PROGRAM DECISION MEMOS

J C S

JOINT FORCE MEMO

MILITARY DEPARTMENTS & AGENCIES

PROGRAM OBJECTIVE MEMOS

R&C

R&C

R&C

R&C

R&C = REVIEW & COMMENT

Figure 2.

48

Table II. Program/Budget Review Schedule
Calendar Year 1973

Item	Action	Agency	Action Date
1	Submit JSOP-Vol I (FY 75-82) - Strategy and Force Planning	J	May 22, 1972
2	Identify and issue Selected Analysis Topics	O	Dec 14, 1972
3	Submit JSOP-Vol II (FY 75-82) - Analysis and Force Tabulations	J	Dec 22, 1972
4	Submit Joint Research and Development Objectives Document (JRDOD)	J	Jan 15, 1973
5	Update Five Year Defense Program through FY 74 - FY 78	C	Jan 19, 1973
6	Submit Telecommunications Subsystem Data	C	Feb 5, 1973
7	Issue Planning and Programming Guidance Memorandum Note: Includes (1) Force Planning (2) Fiscal Levels (3) Materiel Support Planning Guidance (4) POM Guidance (5) SEA Support Guidance	O	. Feb 23, 1973
8	Provide selected analyses	JC	Prior to Mar 30, 1973
9	Submit JSOP-Vol I (FY 76-83) Strategy and Force Planning (CY 74 Cycle)	J	May 1, 1973
10	Submit Joint Force Memorandum (JFM)	J	May 11, 1973
11	Submit Program Objective Memorandum (POM)	C	May 18, 1973
12	Update FYDP consistent with POM FY 75-82	C	May 18, 1973
13	Submit FYDP Telecommunications Subsystems Data	C	May 28, 1973
14	Transmit first Issue Paper to Components	O	Jun 12, 1973
15	Transmit first Issue Paper to SECDEF	O	Jun 18, 1973
16	Transmit last Issue Paper to Components	O	Jul 6, 1973
17	Transmit last Issue Paper to SECDEF	O	Jul 12, 1973

Table II (Continued)

Item	Action	Agency	Action Date
18	Issue Program Decision Memorandum (PDM)	O	Jul 26, 1973
19	Submit reclamas to PDMs	C	Aug 6, 1973
20	Major Issue Meetings	OC	Aug 8-14, '73
21	Issue amended PDMs	O	Aug 17, 1973
22	Issue Budget Guidance	O	Aug 17, 1973
23	Issue Defense Policy and Planning Guidance (CY 1974 Cycle)	O	Sep 3, 1973
24	Identify and issue Selected Analysis Topics (CY 1974 Cycle)	O	Sep 10, 1973
25	Issue Materiel Support Planning Guidance (CY 1974 Cycle)	O	Sep 14, 1973
26	Submit annual budget estimates and backup information	C	Oct 1, 1973
27	Start Budget Hearings	O	Oct 2, 1973
28	Update Five Year Defense Program	C	Oct 12, 1973
29	Submit comments on Defense Policy and Planning Guidance	JC	Oct 19, 1973
30	Submit comments on Materiel Support Planning Guidance	JC	Oct 22, 1973
31	Start issue of Program/Budget Decisions (PBDs)	O	Oct 22, 1973
32	Submit FYDP Telecommunications Subsystem Data	C	Oct 22, 1973
33	Provide comments (reclamas) on PBDs	C	Oct 29, 1973
34	Issue revised PBDs based on reclama comments	O	Nov 30, 1973 to Dec 10, 1973
35	Conduct joint meetings with JCS and Service Secretaries to discuss major unresolved budget issues	O	Dec 7, 1973
36	Submit JSOP-Vol II (FY 76-82) Analysis and Force Tabulations (CY 1974 Cycle)	J	Dec 21, 1973

LEGEND: O = SECDEF
           J = JCS
           C = Military Departments and Defense Agencies
        JC = JCS, Military Departments, Defense Agencies

Source: B. B. Moyer, Jr., "Evolution of PPB in DOD," NMSC Handout, 9 February 1973.

III. THE DEVELOPMENT OF PLANNING, PROGRAMMING, AND
BUDGETING SYSTEM IN THE ROYAL THAI ARMED FORCES

The author has observed that in the past five years, the
Thai Ministry of Defense has acted in many ways to modernize
the resource allocation systems with the goal of improving
control and management, while strengthening the capabilities
for implementing systems with greater emphasis on planning.
The Thai Ministry of Defense began improving its financial
management system in November 1970, by forming a Resource
Management Feasibility Study Committee to review and discuss
system design, development and implementation. This Committee
later submitted a recommendation to form a task group to design
and guide the implementation of a resource management system
tailored to the unqiue needs of the Royal Thai Armed Forces.
With the approval of the Minister of Defense, several mobile
training teams consisting of U. S. Department of Defense (DOD)
officials and faculty members from the Defense Resources
Management Education Center (DRMEC), Monterey, California,
have conducted three one-week seminars in Thailand nearly every
year since 1971.

The RTARF Planning, Programming, and Budgeting System
Development, at present, progresses slowly and the system is
still unable to be implemented because of many barriers.
Major factors of resistance to improvement are the lack of
well-trained personnel to carry out the system, inadequate
training for young officers who will do the job, retirement

of top-level management who support the systems, the hesita-
tion of new top management to introduce a new system, changes
in political policy, and no exact schedule for the system
implementation through the RTARF. This chapter examines how
far the Thai Ministry of Defense has developed its RTARF
Planning, Programming, and Budgeting System and what the RTARF
PPBS looks like. It explains solutions to the slow progress
toward the implementation of RTARF PPBS. It is hoped that
this chapter will benefit the people and organizations involved
with the RTARF PPBS. To date, this is the only document in
English on RTARF PPBS. It is hoped that it will benefit Thai
PPBS advisors from the United States in their work with the
Thai government. The order in which the various components
of PPB are discussed in this document is the order in which
they were addressed by the Thai government. It does not
represent, in the author's opinion, the recommended approach
to the development of a PPB system.

A. PURPOSE OF THAI PPBS

The main purpose of developing the Thai PPBS is to assist
top decision-makers by furnishing them with useful information
and cost-effectiveness analysis for alternative courses of
action in committing limited resources. The objectives of
the Thai PPBS include the following:

1. To help top management in choosing among alternative
courses of action.

2. To prepare military long-range plans to support
national security policies and objectives.

52

3. To establish missions in relation to MOD needs and military long-range plans in order to attain national security objectives.

4. To relate resource costs with MOD missions.

5. To close the gap between military planning and budgeting.

6. To set up programs in accordance with the national security goal rather than with service priorities.

7. To formulate program structures to fit the MOD needs.

8. To equip decision-makers with cost-benefit analysis techniques for selecting forces and weapon systems.

9. To help evaluate incomplete programs.

10. To provide a uniform information system needed by top decision-makers.

B. TENTATIVE THAI PPB CYCLE

The formulation of the tentative Thai PPB cycle has been finished for more than two years and has remained unchanged. The system has not yet been put into action, but includes the following steps:

Step 1. July

Request for approval of the military plans by the Supreme Command Headquarters (SCHQ) planning staff to the Supreme Commander. This request must be made at least fifteen months prior to the beginning of the next fiscal year.

Step 2. August

Submission of the authorized plans to the Minister of Defense for review, recommendation, and approval.

Step 3. October

Submission by the Services and Defense Agencies of all programs for approval to the Office of the Minister of Defense.

Step 4. November

Issuance in November of budget guidance and calendar by the Bureau of Budget (BOB). The Minister of Defense will forward those budget guidance, calendar, and MOD budget directives to the Services and Defense Agencies.

Step 5. December

Submission, in December, of budget requests by the Services and Defense Agencies to the Office of the Minister of Defense, and the Minister of Defense presents MOD budget estimates to the Bureau of Budget.
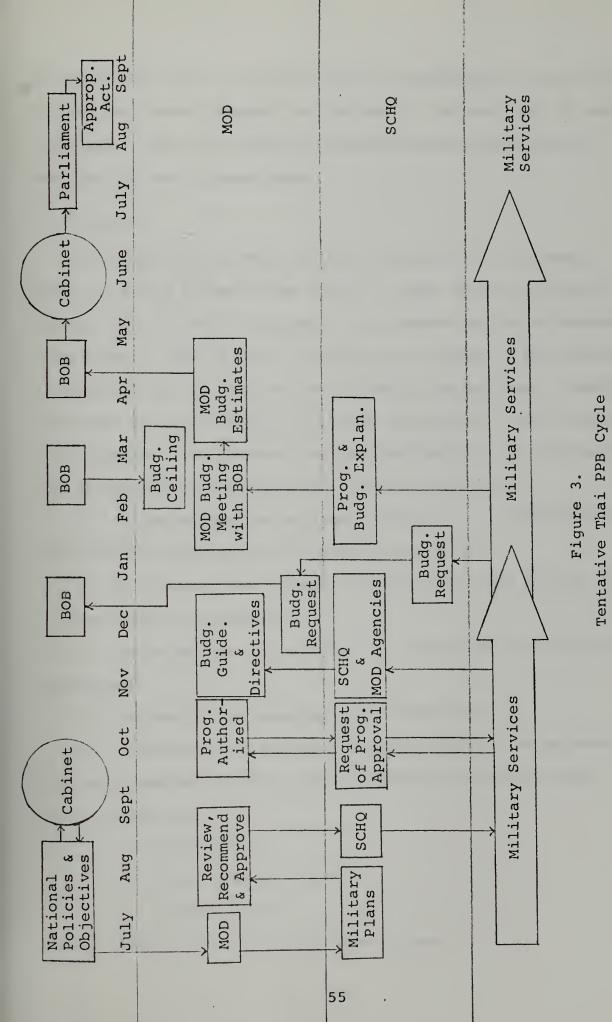
Step 6. January and March

The joint meeting between January and March with the representatives of the Services, Defense Agencies, and the Bureau of Budget to review and discuss the budget requests. After establishing the MOD budget ceiling, the Bureau of Budget presents MOD budget estimates to the Cabinet. Upon receiving the approval of the budget ceiling from the Cabinet, the Office of the Minister of Defense will be notified of the approval through the Bureau of Budget. The MOD Comptroller will prepare budget details within the ceiling and then submit for approval to the Minister of Defense.

Step 7. December

Submission, in December, of the authorized budget estimates to the Bureau of Budget. After the preparation of the

Figure 3.

Tentative Thai PPB Cycle

Source: "RTARF Planning, Programing, and Budgeting System Handout," p. 5, the Comptroller's Office, SCHQ Supreme Command Headquarters.

Appropriation Bill, the Bill will be presented for approval
to the Parliament through the Cabinet. Upon approval by the
Parliament, the Bill will be declared as the Appropriation
Act for the next fiscal year.

C. PLANNING

The objective of Thai military planning is to maintain
adequate Armed Forces to be ready to fight against external
threats and internal insurgency for preserving the independence,
sovereignty, and national interests of Thailand. The planning
is mainly based on the National Security objectives, economic
condition of the country, political situations, and strategic
intelligence. The Supreme Command Headquarters is responsible
for military planning and the following activities:

1. To establish the military objectives in relation to
the National Security policies and objectives.

2. To prepare the strategic intelligence and furnish it
to the agencies concerned.

3. To establish the missions to accomplish the military
objectives.

4. To assign the missions to each Service.

5. To analyze and evaluate military mission requirements.
Military requirements for each service are classified into
three categories:

a. Force units

b. Force support units

c. Support units

Each of these is divided into three phases:

    (1) Long-range requirements (10 years)

    (2) Mid-range requirements (5 years)

    (3) Short-range requirements (1 year).

The Long-range, mid-range, and short-range plans must be
rolling. The term "rolling" indicates that each year one
plan year is dropped and another year is added.

  6. Requirement estimation on:

   a. Manpower

   b. Logistic activities:

    (1) Weapons and equipment

    (2) Constructions

    (3) Operations and maintenance

    (4) Training and education, etc.

  7. Transformation of military requirement into budget
requirement.

D. REQUEST FOR PLAN APPROVAL

  After authorization of military plans and requirements by
the Supreme Commander, the plans and requirements will be
presented for approval to the Minister of Defense. After the
approval, those plans and requirements will be forwarded to the
Services and MOD agencies so that they may be used as guide-
lines for military and financial requirements.

E. FIVE-YEAR DEFENSE PROGRAMS

  The Five-Year Defense Program (FYDP) consists of forces,
manpower, and cost elements. It contains all MOD approved
programs and projects. For support units, the FYDP may be
composed of only manpower and cost elements.

All the Services and MOD agencies must prepare their own FYDP. The FYDP must be presented for approval to the Minister of Defense. After the approval, it becomes the MOD Five-Year Defense Plan.

Costs may be categoried as follows:

1. Research and Development Costs

2. Investment Costs

3. Operating Costs

4. Maintenance Costs.

F. APPROVED PROGRAM AND MILITARY REQUIREMENT CHANGES

Approved programs and military requirements will be up-dated every year to fit changing situations. The long-range plans will be revised at least every two years and/or when there are changes in political policies, military situations, socio-economy, technology, the changing policy of the big power countries, and so on. The revised plans and programs must be approved by the Minister of Defense.

G. PROGRAMMING

MOD programming is a combination of activities or program elements relating to the mission. The purpose of programming is to help improve decision-making to accomplish a definite objective or plan which is specific as to what is to be done, how much resource is required, and the benefit to be obtained. Programming is also a bridge between planning and budgeting. The construction of programs consists of three steps:

1. The program will be designed as an operating tool of the MOD manager. To accomplish this, it will include an identification of homogeneous force data and support data aggregated in a way to assist the decision-making process within the Ministry of Defense. This is done by building the program structure on what is known as force-related and support-related programs. The following eight programs currently comprise the program structure and identify broad areas of both forces and support [Ref. 7].

    Program 1 - Prevention and Counter-Insurgency
    Program 2 - National Defense from External Aggression
    Program 3 - Intelligence and Communication
    Program 4 - Reserve Forces
    Program 5 - Production and Development for Self-Sufficiency
    Program 6 - Personnel Supports
    Program 7 - Training, Research and Education
    Program 8 - Administration and Associated Activities

Programs 1-4 are force programs and Programs 5-8 are force support.

2. The structure will be designed to allow both broad aggregations of data, and presentations and analyses of data that will be meaningful to different managers.

3. The structure will be designed in a manner to allow the application of a systematic means of measuring actual use of resources against planned and approved programs. This is accomplished by consistency in accounting and budgeting terms, the use of identifiable data associated with the program structure, and the adaptability of these data to the chart of accounts. The chart of accounts is the basis for the measurement of actual use of resources within the Ministry of Defense.

These objectives have provided the nucleus around which all Resource Management Systems within the Ministry of Defense are based. Constant review and appropriate revisions will be necessary to keep pace with new demands and requirements. Adequate flexibility has been provided in the structure to allow for expansion.

The force programs are sometimes classified as independent programs and the force support programs as dependent programs. For independent programs, top management can update the size of the force and military requirements to meet the changing situations of the world; but in general, the revision of dependent programs can be made only when there are changes in the independent programs, or simply speaking, changes of dependent programs rely on changes of the independent.

In establishing programs, it is necessary to know what are the major missions or activities required to attain the MOD objectives. After the major programs have been established, they must be divided into subprograms and program elements (sub-subprograms). This is to help direct the performance of program elements to match the objectives of subprograms, the performance of subprograms to match the objectives of major programs, and major programs to match MOD objectives. In addition, when the MOD budget is cut, the program facilitates the cutting of less important projects, and it also provides information to top management on the total amount of money spent in each program, and what kind of work each Service is carrying out in the same program.

The Thai tentative PPBS focuses on management and planning but the existing budgeting system puts emphasis on expenditure control in accordance with appropriation categories. The PPB System will assist in the improvement of decision-making in planning as well as the allocation of Defense resources among various functions, missions and the Services. Since a modern computer system is now utilized in the Ministry of Defense, the transformation of program costs into appropriation category cost, and vice versa, can be accomplished through a "budget crosswalk," sometimes referred to as an electric FYDP.

A "Major program" is a combination of subprograms and program elements designed to express the accomplishment of a definite objective or plan which is specified as to the time-phasing of what is to be done and the means proposed for its accomplishment. The criteria for a determination of major programs are as follows [Ref. 8]:

1. The major program must support the approved plans and objectives.

2. Its importance should exist both at present and in the future.

3. It should be a major activity which top management is always looking for the total budget spent on it.

4. It should be an important program consuming a great amount of resources.

5. It must include many MOD activities.

6. A program which consumes few resources or consists of a program elements or has special activities should be combined with a similar or closely related program.

7. Programs which consume less resources or consist of a few program elements or have special activities but cannot be integrated with any existing programs must be listed and combined into one program.

8. Too many major programs should be avoided, so that top management can make a quick and simple decision.

9. Major programs may cut across organization lines.

10. The formulation of major programs must consider not only the present budget items but also future situations.

A "Subprogram" is a component of a major program. The purpose of setting up subprograms in each major program is to break down a major program into various minor programs. This is to narrow the activities to be carried out to accomplish the objectives of the major program. The following are criteria for the development of a subprogram:

1. A subprogram must be a subdivision of a major program.

2. It must be an important activity and directly support the objectives of its major mission.

3. It is a combination of program elements of similar types.

4. It is a project where top management can make simple decisions.

5. A number of subprograms in each major program should be appropriate in order to provide adequate information for decision-making.

A "Program element" is a description of a mission by the identification of the organizational entities and resources

needed to perform the assigned missions. Resources consist of forces, manpower, materiel quantities and costs, as applicable. The program element is the basic building block of the FYDP. The criteria for the formulation of a program element are as follows:

1. A program element should be designed to provide information needed to meet its requirements for planning and control. In addition, some resources within program elements will also be defined to allow collections needed for special purposes such as detailed supply costs for investment and logistical use.

2. Operations costs are measured costs. Costs will not be allocated or prorated to program elements. For special analysis, prorations of costs will be necessary and these will be built up from "cost models" to fit the needs of the analysis.

3. All costs will be identified to the host activity unless specifically chargeable to the tenant.

4. A program element should be identified in the highest program (i.e., the program with the lowest number to which the total of its output would most likely be associated).

5. Program elements in the mission programs should be thought of as organizational entities and their associated costs as opposed to a collection or display of things.

6. Mission program elements will be such that they do not split the organization units. Elements should consist of identifiable components of organizations to preclude allocation or proration of resources.

7. A program element should be identified with planned mission such as an F.86F squadron or output, that is, to the results that are to be attained such as Base Operating Support.

8. Program elements are classified into two types as (a) Mission, or (b) Service.

9. Mission program elements should always be charged with the costs of services which are relatable and measurable and obtained from service units, in addition to the operations and investment costs routinely chargeable to the element.

Service program elements should reflect only those costs which are not charged to mission elements.

10. Separate program elements will be established for operations costs that would otherwise have to be allocated or pro-rated to two or more program elements.

11. Support program elements that relate two or more elements within a single program will be located directly below the group of elements to which they relate.

12. Each program element should express its outputs in quantitative terms.

13. The outputs of each program element should be expressed in terms of final products.

14. Resources used in program elements should vary in accordance with their outputs but not necessarily to the same proportions.

H. SCOPE OF PROGRAMS

Major programs represent the primary missions to be performed. The scope of the eight tentative major programs

currently identified in the MOD program budget structure are listed and described below. Program elements are the forces, weapon (or support) systems, and similar types of integrated activities, by means of which the missions are accomplished. Since the scope of many program elements was not necessarily matched to existing appropriation activities or organizations, it was initially somewhat indefinite.

1. Prevention and Counter Insurgency consists of missions and activities related to prevention and counter insurgency, civic actions and psychological operations, intelligence and counter intelligence, prevention and suppression, frontier coordination and operations, or any missions and activities of similar types. This program is divided into four subprograms:

    a. Civic Actions and Psychological Operations

        This subprogram consists of organizations, activities, and costs involved in civic actions and psychological operations, for example, public welfare units, mobile development units, radio broadcasting stations, mobile medical teams, training and educational center, rural development units, road construction units, agricultural and industrial occupation promotion units, and other activities of similar types.

    b. Intelligence and Counter-Intelligence

        This consists of organizations, activities and costs concerning intelligence and counter-intelligence such as the Armed Forces Intelligence Operations Center, and the Armed Forces Security Center.

c. Prevention and Suppression

This consists of units, activities, and costs
relevant to prevention and counter-intelligence by land, by
sea, and by air. This subprogram also includes the combined
training and operational teams.

d. Frontier Coordinations and Operations

This consists of units, activities, and costs asso-
ciated with frontier coordinations and operations.

All costs related to the prevention and counter-
insurgency must be included in Program 1, except office sup-
plies and equipments, wages, salaries, and allowances of admini-
stration personnel are contained in Program 8.

The reason that the costs of intelligence and counter-
intelligence are listed under this program is to identify how
much the Ministry of Defense has spent of its annual budget in
these activities.

2. National Defense from External Aggression consists of
missions and activities related to the national defense from
external aggression, i.e., the force-oriented program elements,
including the command and organizations associated with these
forces, the logistics organizations organic to these forces,
and the related logistics and support units which are deployed
or deployable as constituent parts of military, naval, and air
forces, and the field organizations. This program also covers
the activities of mutual aid and common defense among the
allied countries but excludes all activities specified under
other programs such as intelligence and communications (Program

3), reserve forces, production and development for self-sufficiency. This program is broken down into four subprograms.

a. Land Defense

This subprogram consists of combat forces, combat support units, and costs involved in providing land forces in defense against the external aggression. These costs must be associated with manpower supports (salaries and allowances), weapons procurement, military constructions, and all other costs directly related to land defense.

b. Naval Defense

This consists of combat forces, combat support units, and costs relevant to naval forces in defense against the external aggression. These costs must be related to manpower supports, weapons procurement, navy constructions, and all other costs directly associated with naval defense.

c. Air Defense

This consists of combat forces, combat support units, and costs relating to air forces in defense against the external aggression. These costs must be relevant to manpower supports, weapons procurement, air force constructions, and all other costs directly related to air defense.

Those costs incurred in a, b, and c do not include primary training costs, or regular trainings and education in the Services.

d. Mutual Aid and Common Defense among Allied Countries

This subprogram includes costs of dispatching combat forces or military units to oversea operations. Costs

involved are cross training, and friendly country assistance activities.

3. <u>Intelligence and Communications</u> consists of missions and activities directly related to intelligence, security, and communications in different levels of the Ministry of Defense, Supreme Command Headquarters, and the Services, except the resources used for those missions and activities in Program 1. This program is divided into two subprograms:

   a. Intelligence and Security

      This includes the costs of activities associated with intelligence, counter-intelligence and security.

   b. Communications

      This consists of the costs of activities relating to telecommunications and communications incurred by the Supreme Command Headquarters, and the Services.

4. <u>Reserve Forces</u> consists of missions and activities associated with Reserve training for combat readiness in order to facilitate the using of Reserve training forces to support the active forces. This program is divided into two subprograms:

   a. Territorial Defense

      This includes the costs of ROTC and Territorial Volunteer Defense trainings.

   b. Mobilization and Reserve Control

      This includes the costs of Armed Forces mobilization and Reserve control for combat readiness.

5. <u>Production and Development for Self-Sufficiency</u> consists of activities related to mapping, pharmaceutical and medical supplies manufacturing, oil survey and industry, and materiel production for self-sufficiency purposes both in peace and war times. The "Development" appearing in this Program is not contained in Program 7. This Program is divided into five subprograms:

a. Mapping

This includes the costs of activities associated with air photographic mapping, surveys and preparation of land and sea maps. Examples are: air photography, developing and prints, mapping and reproducing, map revision and modification, geodesy, geophysics, town mapping, economic geography mapping, and military topography analysis.

b. Pharmaceutical and Medical Supplies Manufacturing

This includes the costs of activities relating to research, pharmaceutical and medical supplies manufacturing funded from the MOD budget.

c. Oil Surveys and Refinery

This includes the costs of activities relevant to crude oil surveys, digging, refinery, and maintenance of equipments funded from the MOD budget.

d. Materiel Production

This includes the costs of production of weapons, ammunition, explosives, ordnance equipments and materials, costs of ship and aircraft buildings, and costs of production

equipments and material involved in communications, ornaments, supplies and scientific tools and equipments.

e. Other Military Equipments Production

This includes the costs of production of military equipments other than specified in d.

6. Personnel Supports consists of activities related to medicine, military welfares and veteran programs in order to assist military men, civilians, workers and their dependents in case of sickness. It also includes all welfare services and veteran career promotions furnished by the Ministry of Defense, Surpreme Command Headquarters, and Services. This program is divided into three subprograms:

a. Medical Activities

This includes the costs of activities involving hospitals, medical and nursing units.

b. Military Welfare Activities

This includes the costs of welfare activities for military men, civilians, and workers of the Ministry of Defense, Supreme Command Headquarters, and Services.

c. Veteran Activities

This includes the costs of activities concerning veteran welfare and the Association of World War I Veterans.

The costs in a, b, and c do not cover the regular administrative expenses in Program 8.

7. Training, Research and Education consists of missions and activities associated with trainings, research, and education to promote the personnel capabilities and operations

and equipment development. This program is classified into ten subprograms.

a. New Draftee Training

This includes the costs of activities relevant to primary draftee trainings in the Armed Services.

b. Cadet Training and Education

This includes the operating and administrative costs of the Military Academy, Naval Academy, and Air Force Academy.

c. Technical and Professional Training and Education

This includes the operating and administrative costs of the technical and professional schools within MOD, Supreme Command Headquarters, and the Armed Services levels.

d. Military Higher Education

This includes the operating and administrative costs of military institutes of higher education within MOD, SCHQ, and the Armed Services levels.

e. Aviation Training and Education

This includes the operating and administrative costs of the aviation schools of the Armed Services.

f. Domestic Training and Education in Civilian

Institutes

This includes the costs of domestic training and education of military personnel in civilian institutes in accordance with the MOD's policy.

g. Overseas Observations, Conferences, Training, and
    Education

    This includes the costs of observations, confer-
ences, training, and education of military personnel in foreign
countries within the MOD, SCHQ, and the Armed Services levels.

h. Operations Research and Development

    This includes the activities and costs of operations
research and development involving personnel.

i. Military Equipment Research and Development

    This includes the costs of research and development
of materiel and equipment.

j. Electronics and Communications Equipment Research
    and Development

    This includes the costs of research and development
regarding electronics and communications equipment.

8. <u>Administration and Associated Activities</u> consists of
costs of missions and activities related to major administrative
headquarters, field commands, general staff, technical staffs,
special staffs, training education staffs (Department level or
above), and special activities other than the costs of those
in Program 1 through Program 7. This program is divided into
nine subprograms:

a. Major Administrative Headquarters

    This includes the costs of activities associated
with the major administrative headquarters and field commands.

b. General Staffs

    This includes the costs of activities relevant to
the administration of the General Staff Headquarters.

c. Technical Staff

This includes the costs of activities relating to
the administration of the Technical Service Headquarters.

d. Special Staffs

This includes the costs of activities involving
the administration of the Special Staff Organizations.

e. Training and Education Staffs

This includes the costs of activities concerning
the administration of training and education, and the head-
quarters of various schools.

f. Veteran Activity Support

This comprises the costs of activities associated
with the administration of the World War I Veteran Association,
and the Veteran Welfare Organization.

g. Computer Activities

This constitutes the investment and operating costs
of the Armed Forces Computer Center other than salaries and
wages of personnel from the host units.

h. Compensations and Legal Contingencies

This includes the estimated costs of compensations
paid to the individuals or organizations in case of violations
or accidents. It also covers the costs of lawsuits and legal
contingencies.

i. Other Essential Activity Supports

This includes the costs of activities related to
the secret service, Army Television Station, Armed Forces
Medical Society of Thailand, and other activities performed as
specified in the policies.

73

The costs in subprograms a through g are classified into appropriation categories such as salaries, wages, general expenses, land and construction of military establishments.

I. BUDGETING

   1. General

      The budget process is the final phase in the Planning-
Programming-Budgeting Cycle. The annual budget expresses the
financial requirements necessary to support the approved Armed
Services and Defense Agencies programs which were developed
during the preceding phases of planning and programming. It is
through the budget that planning and programming are translated
into annual funding requirements. Each year's budget estimate,
therefore, sets forth precisely what the Armed Services and
Defense Agencies expect to accomplish with the resources
requested for that year. The Thai MOD budget process can be
briefly described as follows:

      a. The budget process in response to the develop MOD
Resources Management System is a process following from the
military plans and policies. The formulation of the budget
follows the MOD major programs.

      b. The MOD Finance Department is assigned as the MOD
Budget Bureau and is responsible for formulating the Five-Year
Defense Financial Plan based on the Defense Minister approved
plans and Five-Year Defense Program. This plan contains budget
estimates for the next five years.

      c. The first year of the five-year financial plan is
the basis for the preparation of the following year's budget.

   2. Modification of Programs for Annual Budgeting

      a. The Supreme Command Headquarters and the Armed
Services must have a joint meeting for modification of plans
and programs corresponding to the military situations and/or

the Defense Minister's policies. This joint meeting must be

held at least fifteen months prior to the beginning of the

next fiscal year. Similarly, the Office of the Under-Secretary

of State and the Office of the Secretary to the Defense

Minister have to revise their plans and programs.

b. The updated plans and programs must be presented

for approval to the Minister of Defense at least one month

prior to submitting the budget estimates. After approval,

those plans and programs will be used as a basis for next year's

budget preparation.

3. Budget Guidance and Direction

a. The MOD Finance Department must issue the Budget

Directives at least 11 months prior to the beginning of the

next fiscal year.

b. Upon receipt of the Budget Guidance and the Budget

Calendar developed by the Bureau of Budget, the MOD Finance

Department must forward those documents to the Supreme Command

Headquarters, the Armed Services, and the Defense Agencies.

4. Budget Preparation and Submission

a. The Services and Defense Agencies must submit their

annual budget requests to the Office of the Minister of Defense.

Generally, the budget requests consist of:

(1) Expenditure Estimates. The expenditure esti-

mates must be formulated in accordance with approved plans and

programs, the budget guidance and directives. Comparison of

the current year and the next year budgets is required as well

as the justification of expenditure estimates of program elements.

The annual budget request has to be prepared in compliance with the specified format.

.   (2)   Receipt Estimates.   In submission of receipt estimates, the receipt categories, details, and explanations must be provided in accordance with the specified format.

b.   The MOD Finance Department is responsible for classifying the Services and Defense Agencies budgets into sub-programs and major programs in relation to the Thai Defense Resources Management System.

c.   The MOD Finance Department must submit the Defense budget to the Minister of Defense for approval, and then, after approval, resubmit the annual budget estimates to the Bureal of Budget within the scheduled dates.

d.   Once the Bureau of Budget completes its review of MOD budget and needs, the budget package and ceiling are returned to the Ministry of Defense for final preparation. The MOD Finance Department will conduct joint meetings with the Supreme Command Headquarters and the Services in order to up-date the plans and programs in compliance with the budget ceiling.   The modified programs and budget estimates must be done in conformity with the objectives of National Defense, and military plans.   Then the estimates are presented for approval to the Minister of Defense and forwarded to the Bureau of Budget after the approval.

5.   Budget Allocation

a.   After the Appropriation Bill has been declared an Act and the MOD appropriation is determined, the MOD Finance

77

Department must present the budget allocations for the Services and Defense Agencies to the Minister of Defense for approval.

b. Upon approval of the allocations, the MOD Finance Department will forward the allocation to the Services and Defense Agencies.

c. The Services and Defense Agencies must allocate budgets to their subordinate units.

6. Budget Execution and Control

a. The Services and Defense Agencies have to execute and control their plans, programs, and budget in compliance with the directives, rules, and regulations.

b. The Commanding Officer who authorizes payment must classify the allocations into the expenditure categories and must provide accounting control over funds of his unit by showing, in compliance with the specified format, the allocations received, the obligations incurred, and the balance of each expenditure category.

The Commanding Officer is authorized to transfer the funds from one category to another in case there exists an excess in one category and a shortage in another unless the funding control has been specified otherwise.

c. Once the Minister of Defense has approved the budget allocations, any later changes must also be requested for approval to the Minister of Defense.

d. The authorization of payments or obligations must comply with the rules and regulations. If anyone violates this regulation, he must be responsible for his conduct unless he has rejected the Commander's order by letter.

e.   The Commanding Officer under paragraph b must pro-
vide a monthly statement of payments as specified. The state-
ment must be submitted to the Services and Defense Agencies,
as the case may be, within 15 days after the end of the month.
The Services and Defense Agencies must also submit a summary
of payment for each program to the Minister of Defense through
the MOD Finance Department no later than the end of next month.

J.   SOLUTION TO THE PROBLEMS OF PPBS IMPLEMENTATION

The author believes that the following suggestions will
make substantial progress toward the implementation of RTARF
PPBS.

1.   Provide regular PPBS and systems analysis training pro-
grams on different levels for RTARF officers, with an emphasis
on long-period training for young officers who will carry out
the systems;

2.   Try to get the active support, both formal and informal,
of top-level management of the Services and Defense Agencies;

3.   Publish the schedule for the PPBS implementation through-
out the Armed Forces;

4.   Insulate PPBS from politics as much as possible;

5.   Make the Agency recognize that PPBS is essentially an
agency decision-making tool rather than a budget process.

6.   Provide qualified agency staffs; and

7.   Provide sufficient agency staff, particularly in the
central analytic unit.

IV. SYSTEMS ANALYSIS: AN IMPORTANT TOOL TO SUPPORT PPBS

In the selection of weapon systems, in the design of forces, and in the determination of the level of the national defense effort, the judgment of the decision-makers can no longer be intuitive or rely on past experience alone since the range of choice is too broad and the number and types of alternatives are too great. Therefore, to make better decisions, the decision-maker needs a technique such as "systems analysis" to help his judgment. Systems analysis takes a complex problem and sorts out the tangle of factors. It aims to assist the decision-maker by furnishing him with the quantitative estimates of the effectiveness and costs of each of the alternative courses which he could choose. The purpose of this chapter is to discuss the systems analysis as an important tool to support PPBS so that the RTARF officers will realize that in putting the Thai PPBS into action, the application of systems analysis cannot be avoided.

A. WHAT IS SYSTEMS ANALYSIS

Alain C. Enthoven [Ref. 9] has described systems analysis in the U. S. Department of Defense as the application of methods of quantitative economic analysis and the scientific method in the broadest sense to the problems of choice of weapon systems and strategy. It is a systematic attempt to provide decision-makers with a full, accurate, and meaningful summary of the information relevant to clearly defined issues and alternatives.

E. S. Quade [Ref. 10] has defined systems analysis as a systematic approach to help a decision-maker choose a course of action by investigating his full problem, searching out objectives and alternatives, and comparing them in the light of their consequences, using an appropriate framework, in so far as possible analytic, to bring expert judgment and intuition to bear on the problem.

Fred S. Hoffman [Ref. 11] has stated that systems analysis played a central role in the system that evolved in the Defense Department, and an understanding of its salient characteristics is necessary to understand the PPB system. Systems analysis is a term whose meaning has been eroded by very wide and diverse usage. The sense of the term most relevant to PPB is the one that describes the approach to national security during the early 1950's. The approach evolved in response to the planning problems of the early post-World War II period.

Enthoven [Ref. 12] has further stated that the systems analysis approach, as it is being applied in the Office of the Secretary of Defense, is a systematic attempt to bring to bear on the problem of planning the defense program many relevant disciplines, and to do so in an integrated way. The list includes traditional military planning, economics, political science and other social sciences, applied mathematics, and the physical sciences. Because Enthoven is an economist, he has also emphasized systems analysis as applied economic analysis.

In contrasting operations research and systems analysis, Enthoven [Ref. 13] has furthermore discussed systems analysis as follows:

81

1. Systems analysis is an approach to broader problems such as determining the preferred characteristics for a new attack aircraft, the design of the POLARIS system, a determination of how many POLARIS submarines are required, or the study of the number of antisubmarine ships or the number of attack carriers that should be included in the U. S. Navy force structure.

2. Systems analysis has broader orientation. It analyzes alternative objectives and explores their implications. It is focused more on exploring the implications of alternative assumptions than on analyzing in extensive detail the implication of a single set of assumptions. Systems analysis ordinarily is not concerned with computing an optimum solution. If there is optimization involved, it is optimization in the large, rather than in the small. Systems analysis is concerned with avoiding gross errors and with giving the decision-maker a menu of choices representing different mixes of effectiveness and cost so that he can make his choices. It is part of systems analysis to question the objectives.

3. Systems analysis takes problems that are not defined and attempts to define them. If the problem cannot be well defined, that is, specified in all its aspects, systems analysis techniques are still useful in helping the decision-maker by attempting to define those aspects of the problem that can be defined and quantified. Systems analysis emphasizes design of new solutions and widening of the range of alternatives, rather than selecting the best alternative from among a predetermined range.

4. The epistemology of systems analysis is the epistemology of the inexact sciences. Statistics may be used, although in most major weapon systems problems the uncertainties are greater than the statistical variations, so that extensive use of mathematical statistical techniques is not likely to produce useful results. Systems analysis emphasizes techniques for dealing with uncertainty, such as sensitivity tests, the use of ranges, alternative scenarios, and the like.

5. Systems analysis emphasizes the basic economic concepts, mostly of simple concepts of marginal products and marginal cost. The systems analysis approach has developed a variety of techniques of analyzing complex problems of decision in such a way as to make calculation the servant of informed judgment. It has made use of calculation, but it puts much less emphasis on it.

Today, the national security requires a more efficient utilization of resources. Defense decisions depend heavily on systems analysis, applied within the context of a modern management system, Planning, Programming, and Budgeting.

B. THE NEED FOR SYSTEMS ANALYSIS

The need for systems analysis exists not only in the Office of the Secretary of Defense, the Joint Chiefs of Staff, and the headquarters of the military departments, but also at the other levels of the management structure in the Defense Establishment. After all, the purpose of this function is to help reduce the uncertainties involved in making choices among alternatives and such choices have to be made at many different echelons. The

83

areas of interest, the problems, and the subject matter will be different at these different levels, but the general approach and the techniques will be basically the same.

This objective, therefore, has been to build an integrated and mutually supporting structure of systems analysis throughout the Defense Establishment, with the broadest kind of exchange of information and techniques at and among various levels. This arrangement provides the checks and balances so essential to minimizing parochial viewpoints and organization bias. The systems analyst, like any other scientist, must always be prepared to submit his work to critical scrutiny, and not just by other systems analysts. This is one of the great merits of the scientific method, it is an open, explicit, verifiable, and self-correcting process.

From a small beginning, systems analysis has now become a vital and integral part of the Defense Department decision-making process. The new programming function provides the LINK between planning and budgeting, relating both the forces and their resources costs to major military missions. Systems analysis provides the analytical foundation for the making of sound objective choices among the alternative means of carrying out these missions. Thus, the Secretary of Defense now has the tools he needs to take the initiative in the planning and direction of the entire Defense effort on a truly unified basis.

C. THE ELEMENTS OF ANALYSIS

The central importance of the model can be seen most readily, perhaps, by looking at its relation to the other elements

of analysis. E. S. Quade [Ref. 14] has discussed the following five elements. Each of them is present in every analysis of choice, although they may not always be explicitly identified.

1. The Objective (or objectives). Systems analysis is undertaken primarily to help choose a policy or course of action. The first and one of the most important tasks of systems analysis is to discover what objectives the decision-maker is, or should be, trying to obtain through the options open to him, and how to measure the extent to which they are, in fact, attained. This done, strategies, forces, or equipment are examined, compared, and chosen on the basis of how well and how cheaply they can accomplish these objectives.

2. The Alternatives. The alternatives are the means by which it is hoped the objectives can be attained. They need not be obvious substitutes or perform the same specific functions. Thus, to protect civilians against air attack, shelters, "shooting" defenses, counterforce attack, and retaliatory striking power are alternatives.

3. The Costs. The choice of a particular alternative for accomplishing the objective implies that certain specific resources can no longer be used for other purposes. These are the costs. In analyses for a future time period, most costs can be measured in money, but their true measure is in terms of the opportunities that they preclude. Thus, if the objective is to compare ways to eliminate guerrillas, the injury or death of nonparticipating civilians caused by the various alternatives must be considered a cost, for such casualties may recruit more guerrillas.

4. A Model (or models). A model is a representation of realty which abstracts the features of the situation relevant to the question being studied. The means of representation may vary from a set of mathematical equations or a computer program to a purely verbal description of the situation, in which judgment alone is used to assess the consequences of various choices. In systems analysis, or any analysis of choices, the role of the model (or models, for it may be inappropriate or absurd to attempt to incorporate all the aspects of a problem in a single formulation) is to estimate the consequences of the choice; that is, the cost that each alternative will incur and the extent to which each alternative will attain the objective.

5. A Criterion. A criterion is a rule or standard for ranking the alternatives in order of desirability and indicating the most promising. It provides a means for weighing cost against performance.

D. PRINCIPLES OF GOOD ANALYSIS

A good analysis requires answering many questions, such as: What is the problem? How complex is it? Is there any uncertainty involved? What are the alternative solutions to the problem? What are the criteria of effectiveness? These questions are primarily problems for a military planner, although he can doubtless profit in their formulation from cooperation with operations researchers and/or systems analysts. E. S. Quade [Ref. 15] has described the principles of good analysis as follows:

1. It is all important to tackle the "Right" problem.
A large part of the investigators' efforts must be invested
in thinking about the problem, exploring its proper breadth,
and trying to discover the appropriate objectives and to search
good criteria for choice. If the best set of alternatives
is not chosen to compare it means the best solution will not
be discovered. If the wrong objective has been chosen, then
the wrong solution to the problem might be found. Getting
an accurate answer to the wrong question is likely to be far
less helpful than an incomplete answer to the right question.

2. The analysis must be systems oriented. Rather than
isolating a part of the problem by neglecting its interactions
with other parts, an effort should be made to extend the bound-
aries of the inquiry as far as required for the problem at
hand, to find what interdependencies are important, and to
study the entire complex system. This should be done even if
it requires the use of purely intuitive judgment.

An interdisciplinary team of persons having a variety of
knowledge and skills is helpful here. This is not so merely
because a complex problem is likely to involve many diverse
factors that cannot be handled by a single discipline. More
importantly, a problem looks different to an economist, an
engineer, a political scientist, or a professional bureaucrat,
and their different approahces may contribute to finding a
solution.

3. The presence of uncertainty should be recognized, and
attempts made to take it into account. Most important decisions

are fraught with uncertainty. In planning urban development, there are uncertainties about city growth patterns, about the extent to which freeways or rapid transit systems will be used, about costs, about tax revenues, about the demand for services. For many of these things, there is no way to say with confidence that a given estimate is correct. The analyst attempts to identify these uncertainties and evaluate their impact. Often he can say the value of a parameter will be more than A but less than B. Sometimes it is possible to indicate how the uncertainty can be reduced by further testing and how long that will take. Most important, the analyst should determine the effect of uncertainty on the answers. This is done by a sensitivity analysis that shows the answers change in response to changes in assumptions and estimates.

The study report should include the presentation of a contingency table showing the effectiveness and cost associated with each significant alternative for various future environments and for each set of assumptions about the uncertainties.

4. The analysis attempts to discover new alternatives as well as to improve the obvious ones. The invention of new alternatives can be much more valuable than an exhaustive comparison of given alternatives, none of which may be very satisfactory.

5. While in problems of public policy or national security the scientific method of controlled repeated experiment cannot be used, the analysis should strive to attain the standards traditional to science. These are (1) intersubjectivity:

results obtained by processes that can be duplicated by others to attain the same results; (2) explicitness: use of calculations, assumptions, data, and judgments that are subject to checking, criticism, and disagreement; and (3) objectivity: conclusions that do not depend on personalities, reputations, or vested interests. Where possible, these conclusions should be in quantitative and experimental terms.

E. EXAMPLE OF SYSTEMS ANALYSIS

To help clarify how systems analysis works as an important tool of decision-making in PPBS, an example of the quantitative aspect of systems analysis, described by Enthoven [Ref. 16] is illustrated as follows:

Suppose that, all operational factors considered, each missile has a 50 percent chance of destroying a target, and there are 100 enemy targets to be destroyed. Assume that there is a requirement to destroy 90 percent of the targets. If one missile is programmed per target, on the average the 100 programmed missiles can be expected to destroy 50 targets (50 percent of 100 targets). If two missiles are programmed per target, then 200 missiles can be expected to destroy 75 targets, and so forth. On the average, a force of 340 missiles can be expected to destroy 90 targets. Table III shows the average number of targets destroyed for different forces.

The question immediately arises as to whether it is worth the cost of 340 missiles to destroy 90 targets. An even more important question is, is it worth the price of 16 extra missiles to raise the average number of targets destroyed from 89

89

Table III.

Comparison of Different Size of

Missile Forces and Target Destroyed

Number of Missiles	Average Number of Targets Destroyed
200	75
300	87.5
308	88
324	89
340	90
356	91
380	92.5
400	93.75

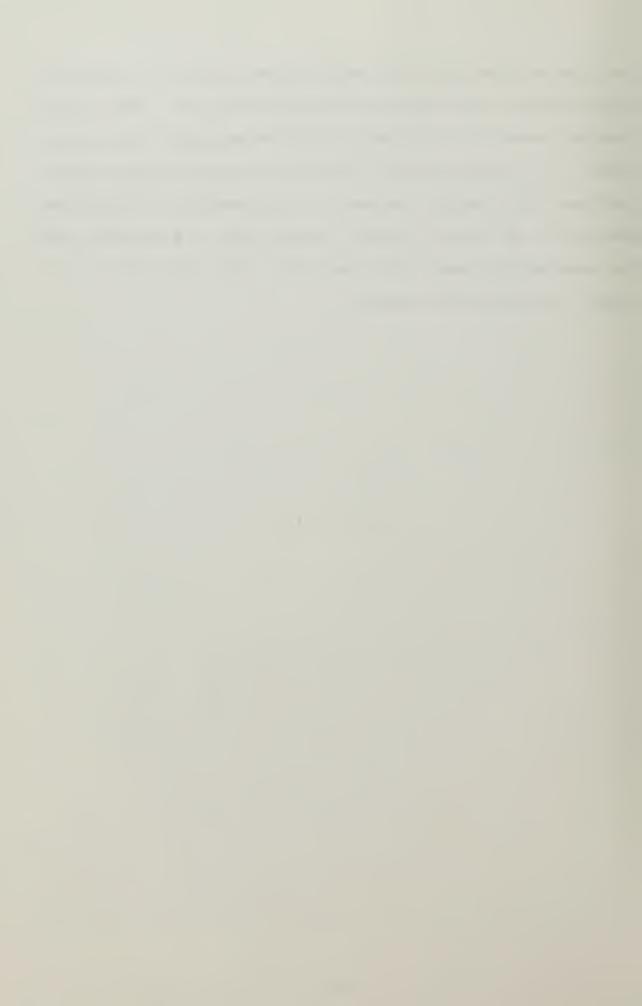Source: S. A. Tucker, Ed., A Modern Design for Defense

Decision: A McNamara-Hitch-Enthoven Anthology,

p. 165, Industrial College of the Armed Forces,

1966.

to 90; or of 140 extra missiles to raise the average number of targets destroyed from 75 to 90? This means, at the margin, that raising the required average number of targets destroyed frmo 89 to 90 costs 16 missiles, or in other words, the 341st missile will add one-sixteenth of one target to the average number of targets destroyed. Therefore, it is very important for the analyst to describe the concepts of marginal cost and marginal product (marginal effectiveness) for the decision-maker. However, the fact that raising the required damage level from 89 to 90 costs 16 missiles does not necessarily mean that it is not worth doing so. It depends upon the decision-maker

to judge at what point the extra target destruction caused by more missiles is no longer worth the extra cost. This illustration reveals the distinction between marginal and average costs. If it were not made, the decision-maker might be misled into thinking that because, on the average, 340 missiles destroy 90 of the 100 targets, whence about 3.8 missiles must be expended for each target destroyed, the 90th target also costs 3.8 missiles to destroy.

V. SUMMARY AND CONCLUSION

The Planning, Programming, and Budgeting System (PPBS) was
developed and implemented in the U. S. Department of Defense
in the early 1960's in order to give the Secretary the inform-
ation and management tools he needed to develop defense pro-
grams in the national interest. PPBS was intended to facili-
tate budgeting in terms of military forces and weapon systems
instead of the resource categories of military personnel,
procurement, operation and maintenance, research, and construc-
tion. Costs were to be decided for the lifetime of a system,
not just for the budget year. Finally, such data were to be
utilized in analysing quantitatively the cost effectiveness
and benefit of alternative programs or systems. Planning and
programming are carried out in terms of major mission and
support programs. Both at the Secretary of Defense and Military
Service levels, there exists an in-house capacity for quantita-
tive analysis of alternatives. Programming decisions are
expressed in the annual updating of a five-year defense program.
It identifies the five-year requirements for each Service by
major program categories. Budget estimates are formulated and
approved to implement the first year of the five-year projec-
tions. The planning and programming phases of PPBS have enabled
the Secretary of Defense to see major force and support issues
and have helped him to make effectively his decision. This
thesis is an attempt to investigate how the Royal Thai Armed
Forces planning, programming, and budgeting system was developed.

92

The thesis also includes the discussion of systems analysis as an important tool to support PPBS.

The development of the Planning, Programming, and Budgeting System in the Royal Thai Armed Forces (RTARF) was aimed at improving its financial management system by using the U. S. PPBS concepts and ideas, and adapting them to fit the Thai needs, environments, and cultures. In the past five years, the Thai Ministry of Defense has acted in many ways to modernize its resource allocation systems with the goal of improving control and management, while strengthening the capabilities for implementing systems with greater emphasis on planning. In November 1970, the Resource Management Study Committee was formed to review and discuss the system design, development and implementation. This committee later submitted a recommendation to form a task group to design and guide the implementation of PPBS tailored to the unqiue needs of the Royal Thai Armed Forces.

The Thai Ministry of Defense now has established eight tentative major programs consisting of the following four mission-oriented and four support-oriented programs. Each major program is broken down into subprograms and program elements.

```
Program 1 -- Prevention and Counter-Insurgency
Program 2 -- National Defense from External Aggression
Program 3 -- Intelligence and Communication
Program 4 -- Reserve Forces
Program 5 -- Production and Development for Self-Sufficiency
Program 6 -- Personnel Supports
Program 7 -- Training, Research and Education
Program 8 -- Administrations and Associated Activities
```

Systems Analysis, as used in the Defense Establishment, is the application of methods of quantitative economic analysis and the scientific method to the problems of choice of weapon

systems and strategy. It is a systematic attempt to provide
decision-makers with a full, accurate, and meaningful summary
of the information relevant to clearly defined issued and
alternatives. Today, the national security requires a more
efficient utilization of resources. Defense decisions depend
heavily on systems analysis within the context of Planning,
Programming, and Budgeting Systems. The need for systems
analysis exists not only in the Office of the Secretary of
Defense, the Joint Chiefs of Staff, and the headquarters of the
military departments, but also at the other levels of the manage-
ment structure in the Defense Establishment. The elements of
analysis consist of (1) An objective or objectives, (2) Alter-
natives, (3) Costs, (4) A model or models, and (5) A criterion.
The effective analysis should comprise these principles:
(1) Tackle the right problem, (2) Be systems oriented,
(3) Recognize uncertainty and take into account, (4) Attempt to
discover new alternatives as well as to improve the obvious
ones, and (5) Strive to attain the standards traditional to
the science.

The RTARF Planning, Programming, and Budgeting System, at
present, progresses slowly and the system is still unable to
be put into operation because of many barriers. The important
factors apparently resisting the improvement are the lack of
well-trained personnel who will carry out this System, the
retirement of top-level management who support the concept,
the hesitation about new systems by new top management, and
the changes in political policy. These problems can be solved

94

by (1) providing PPBS and systems analysis regular training programs at all organizational levels, (2) obtaining active support of top-level management, (3) setting an exact schedule for the PPBS implementation, (4) having no effect on PPBS implementation when political policy changes, (5) creating a general perception that PPBS is essentially a decision-making tool rather than a budget process, (6) requiring qualified agency staffs, and (7) providing sufficient agency staffs, particularly in the central analytic unit.

APPENDIX A

Program Structures

The MOD program structure consists of the following major programs, subprograms, and program elements:

<u>Major programs</u>:

1. Prevention and Counter-Insurgency

2. National Defense from External Aggression

3. Intelligence and Communication

4. Reserve Forces

5. Production and Development for Self-Sufficiency

6. Personnel Supports

7. Training, Research and Education

8. Administrations and Associated Activities

1. <u>Prevention and Counter-Insurgency</u>

    a. Civic Actions and Psychological Operations

        (1) Psychological Operations Unit

        (2) Public Welfare Unit

        (3) Mobile Rural Development Teams

        (4) Radio Broadcasting Stations Unit

        (5) Public Assistance Unit

        (6) Mobile Medical Teams

        (7) Geographical Survey for Development Preparation Units

        (8) Training and Education Unit

        (9) Youth Activities Promotion Unit

        (10) Public Development Unit

        (11) Road Construction Unit

        (12)   Public Relations Unit

        (13)   Religious Activities Support Unit

        (14)   Agricultural and Industrial Occupation Promotion Unit

        (15)   Fresh Water Well Construction Unit

        (16)   Protein Produce Expansion Unit

        (17)   Staff Inspections

        (18)   Motor Vehicle Support Unit

        (19)   Flight Training Unit

        (20)   Housing Construction and Repairs

b.   Intelligence and Counter-Intelligence

        (1)   Intelligence--Armed Forces Intelligence Operations Center

        (2)   Counter-Intelligence--Armed Forces Security Center

c.   Prevention and Suppression

        (1)   Land Combat Force

        (2)   Naval Combat Force

        (3)   Air Combat Force

        (4)   Joint Training and Operations

d.   Frontier Coordinations and Operations

        (1)   Frontier Coordination Committee

        (2)   Frontier Operations Unit

2.   <u>National Defense from External Aggression</u>

a.   Land Defense

        (1)   Land Combat Forces

            (a) First Army Area

                First Infantry Division

                Sixth Infantry Division

Artillery Battalion

Signal Battalion

Engineer Battalion

(b) Second Army Area

Third Infantry Division

(c) Third Army Area

Fourth Infantry Division

(d) Armored Division

(e) Anti-Aircraft Artillery Division

Twenty-third Regiment Combat Team

(f) Ninth Infantry Division

(g) Fifth Military Division

Fifth Regiment Combat Team

(h) Special Warfare Center

(i) Army Aviation Regiment

(j) 101st Artillery Battalion

(k) Engineer Department Royal Guard

(l) Signal Battalion, Army Headquarters

(2) Support Units

(a) First Army Area Headquarters

(b) Second Army Area Headquarters

(c) Third Army Area Headquarters

(d) Fifth Military Circle Headquarters

(e) Combat Support Forces Headquarters, Second Army Area

(f) Combat Support Force Headquarters, Fifth Military Circle

(g) First Military Circle

(h) Second Military Circle

(i) Third Military Circle

(j) Fourth Military Circle

(k) Fifth Military Circle

(l) Sixth Military Circle

(m) Seventh Military Circle

(n) Lopburi Military District

b. Naval Defense

   (1) Naval Combat Forces

      (a) Surface Operations Ships

        - D.E./D.R./A.P.D.

        - P.C./P.C.E

        - P.G.M. 165 - 101/ T.P.L.

        - Sloops

        - M.P.G.

      (b) Mine Warfare Squadrons

        - M.S.F.

        - M.C.H.

        - M.M.C.

      (c) Amphibious Forces

        - L.H.D.

        - L.S.T.

        - L.S.I.L.

      (d) Naval Air Force

        - S. F.

        - A.E.I. or O.V. 10

        - O.I.A.

- H.334/H.2

(e) Fleet Marine Force

- Marine Battalion

(2) Combat Force Supports

(a) Replenishment Group

(b) Bangkok Naval Base Station

(c) Sattahib Naval Base Station

(d) Songkhla Naval Base Station

(e) Traad Naval Base Station

c. Air Defense

(1) Air Combat Forces

(a) Bomber Squadrons

(b) Fighter Squadrons

- F-86F

- F-5A

(c) Flight Training Squadrons

- T-33A

- T-28D

(d) Reconnaissance Squadron

- OV-1A

(e) Attack Squadrons

- OV-10

- A-37B

(f) Security Battalion

(g) Territorial Joint Combat Squadrons

(h) Transport Squadrons

- C-47A

- C-123B, Provider

        (i) Helicopter Squadrons

          - H-34C

          - UH-IH

        (j) Administration Squadron

          - L-28A

    (2)   Air Combat Support Units

        (a) Office of the Air Force Commander-in-Chief (Donmuang)

        (b) Air Wings (1 to 7)

        (c) Radar and Communication Activities

  d.   Mutual Air and Common Defense among Allied Countries

    (1)   Joint Training among Allies

    (2)   Actions in compliance with Commitments to Allies

    (3)   Friendly Country Assistance

3.   Intelligence and Communication

  a.   Intelligence and Security

    (1)   Security Center

    (2)   Intelligence Operations Center

    (3)   Armed Forces Intelligence

    (4)   Intelligence, Army Directorate of Intelligence

    (5)   Offices of the Military Attache

    (6)   Intelligence, Naval Director of Intelligence

    (7)   Offices of the Naval Attache

    (8)   Intelligence, Air Force Directorate of Intelligence

    (9)   Offices of the Air Force Attache

  b.   Communications

    (1)   Telecommunication

    (2)   Joint Communication Battalion, SCHQ

(3) Signal Battalion, Army

(4) Naval Communication Center

(5) Air Force Communication Center

4. Reserve Forces

   a. Territorial Defense

      (1) ROTC training

      (2) Non-Commissioned Officers Training

      (3) Territorial Volunteer Defense Training Supports

   b. Mobilization and Reserve Control

      (1) Army Mobilization Training and Reserve Control

      (2) Naval Mobilization Training and Reserve Control

      (3) Air Force Mobilization Training and Reserve Control

5. Production and Development for Self-Sufficiency

   a. Mapping

      (1) Air Photographic Mapping

          (a) Air Photography, Developing and Prints

          (b) Mapping and Reproducing

          (c) Map Revision and Modification

      (2) Surveys and Preparation of Land Maps

          (a) Geodesy

          (b) Geophysics

          (c) Town Mapping

          (d) Econimic-Geography Mapping

          (e) Military Topography Analysis

      (3) Surveys and Preparation of Sea Maps

   b. Pharmaceutical and Medical Supplies Manufacturing

      (1) Armed Forces Pharmaceutical Factory

102

c. Oil Surveys and Refinery

    (1)   Crude Oil Surveys

    (2)   First Oil Refinery

    (3)   Second Oil Refinery

d. Materiel Production

    (1)   Production of Weapons, Ammunitions, and Explosives

        (a) Light Weapons Factory

            - H.K.33

            - Submachine Guns

        (b) Hand and Rifle Grenades Factory

        (c) Rifle Ammunitions Factory

        (d) Explosive Powder Factory

        (e) Fuse Factory

        (f) Ordnance Parts and Equipment Factory

    (2)   Ship Building and Equipment Manufacturing

    (3)   Aircraft Construction and Equipment Manufacturing

    (4)   Communications Equipment Manufacturing

    (5)   Clothes and Leather Manufacturing

        (a) Clothes and Decorations Factory

        (b) Boots/Shoes and Leather Factory

        (c) Canvas and Fiber Equipment Factory

    (6)   Scientific Equipment Manufacturing

    (7)   Food Production

e. Other Military Equipments Production

6. Personnel Supports

a. Medical Activities

    (1)   Army Hospitals and Associated Activities

(a) Army Hospitals and Associated Activities

(b) Mongkutklao Hospital

(c) Anantamahidol Hospital

(d) Suranaree Hospital

(e) Thanarat Hospital

(f) Chirapravat Hospital

(g) Vachirawudh Hospital

(h) Chakrabongse Hospital

(i) Adison Hospital

(j) Sapasithiprasong Hospital

(k) Overseas Combat Center Hospital

(l) Surasakdimontri Hospital

(m) Udorn Military District Hospital

(n) Other Nursing Units

(2) Naval Hospitals and Associated Activities

(a) Naval Medical Department

(b) Pinklao Hospital

(c) Satahib Naval Hospital

(d) Other Nursing Units

(3) Air Force Hospitals and Associated Activities

(a) Air Force Medical Service Department

(b) Bhumibol Adulyades Hospital

(c) Chantarubeksa Hospital

(d) Fifth Wing Hospital

(e) Other Nursing Units

b. Military Welfare Activities

(1) Dependent Tuition and Fee Supports

    (a) Office of the Under-Secretary

    (b) Supreme Command Headquarters

    (c) Army

    (d) Navy

    (e) Air Force

 (2) Quarters Allowance

    (a) Office of the Under-Secretary

    (b) Supreme Command Headquarters

    (c) Army

    (d) Navy

    (e) Air Force

 (3) Housing Construction and Facilities

    (a) Office of the Under-Secretary

    (b) Supreme Command Headquarters

    (c) Army

    (d) Navy

    (e) Air Force

 (4) Sports and Games

    (a) Supreme Command Headquarters

    (b) Army

    (c) Navy

    (d) Air Force

 (5) Fresh Water Procurement

 (6) Entertainment and Recreation

    (a) Army

    (b) Navy

    (c) Air Force

c. Veteran Activities

    (1) Welfares

        (a) The Association of World War I Veterans

        (b) Veteran Welfare Organizations

           - General Welfare

           - Occupational Promotion

           - Medicare Service

    (2) Agricultural Communities

        (a) Chanuman Community

7. Training, Research and Education

a. New Draftee Training

    (1) Army New Draftee Training

    (2) Navy New Draftee Training

    (3) Air Force New Draftee Training

b. Cadet Training and Education

    (1) Military Preparatory School

    (2) Chulachomklao Royal Military Academy

    (3) Naval Academy

    (4) Air Force Academy

c. Technical and Professional Training and Education

    (1) Military Industrial School

    (2) Judge Advocate General's School

    (3) Military Technical Training School

    (4) Armed Forces Survey Academy

    (5) Intelligence School

    (6) Security School

    (7) Army Non-Commissioned Officer School

(8)   Naval Non-Commissioned Officer School

(9)   Air Force Non-Commissioned Officer School

(10)   Infantry School

(a) Field Grade Officer Course

(b) Company Grade Officer Course

(c) Non-Commissioned Officer Course

(d) Non-Commissioned Officer Student Course

(11)   Cavalry School

(12)   Artillery School

(13)   Special Warfare School

(14)   Engineer School

(15)   Signal School

(16)   Ordnance School

(17)   Transportation School

(18)   Medical Field Service School

(19)   Veterinary School

(20)   Quartermaster School

(21)   Military Police School

(22)   Adjutant School

(23)   Finance School

(24)   Nursing Schools (Army, Navy, and Air Force)

(25)   Basic Officer School

(26)   Electronics School

(27)   Welding Schools (Army, Navy, and Air Force)

d. Military Higher Education

(1)   National Defense College

(2)   Army War College

  (3) Naval War College

  (4) Air Force War College

  (5) Armed Forces Staff College

  (6) Army Command and General Staff School

  (7) Naval Command and General Staff School

  (8) Air Force Command and General Staff School

  (9) Advanced Engineer School

 (10) Senior Officer School

 (11) Joint Operations School

 (12) Psychological Warfare School

 (13) Logistical School

e. Aviation Training and Education

  (1) Army Aviation School

    (a) Fixed Wing Aircraft Course

    (b) Helicopter Course

    (c) Aircraft Repair and Maintenance Course

    (d) Radio Repair Course

  (2) Air Force Flight Training School

    (a) Primary Flight Training Course

    (b) Secondary Flight Training Course

    (c) Aircraft Repair and Maintenance Course

    (d) Radio and Communication Equipment Repair Course

f. Domestic Training and Education in Civilian Institutes

  (1) Medical Training and Education

  (2) Engineering Education

  (3) Other Education

g. Overseas Observations, Conferences, Training and Education

 (1) Training and Education in Military Institutes

  (a) Technical Schools

   - Officer Course

   - Non-Commissioned Officer Course

  (b) Military Advanced Schools

   - War Colleges

   - Other Advanced Schools

 (2) Training and Education in Civilian Institutes

  (a) Medical Training and Education

  (b) Engineering and Architecture Education

  (c) Computer Education

  (d) Law Education

  (e) Other Education

 (3) Observations and Conferences

  (a) Conferences

  (b) Observations

h. Operations Research and Development

 (1) Studies of Draftee Viewpoints

 (2) Research of Psychological Operations

 (3) Research of Military Small Unit Capability

 (4) Research of Personnel Field Type Equipment - Number and Weight

i. Military Equipment Research and Development

 (1) Measurement of Deterioration Rate of Equipment in Southeast Asia Region

 (2) Grass Planting Study

(3)   Life Sustaining Project for People Working
       in the Air

(4)   Ambush Protecting Vehicle Project

(5)   Special River Patrol Craft Project

(6)   Army Equipment Development Project

(7)   Armed Forces Vehicle Testing Area Project

(8)   Armed Forces Light Weapons Testing Area
       Project

(9)   Military Equipment Testing and Evaluation
       Project

j.   Electronics and Communications Equipment Research
     and Development

(1)   Antenna Project

(2)   Infiltration Electronics Censor Project

(3)   Signal Code Project

(4)   Radio Project

(5)   Special Project

       (a) Man Pack Radio

       (b) Rescue Radio

       (c) Loran

       (d) Frequency Management

       (e) Radio Frequency Interference of
           Ubol-Station

       (f) Radio Frequency Interference of Lopburi
           Station

       (g) Navy Antenna Coupler

       (h) Radio Frequency Interference Study

       (i) Royal Project Log Periodic

       (j) UHA Antenna

       (k) RTARF Antimulti Coupler

       (l) Direction Finder

8. Administration and Associated Activities

   a. Major Administrative Headquarters

      (1)   Office of the Secretary of the Minister

      (2)   Office of the Under-Secretary of State

      (3)   Office of the Supreme Commander

      (4)   Office of the Commander-in-Chief of the Army

      (5)   Office of the Commander-in-Chief of the Navy

      (6)   Office of the Commander-in-Chief of the
            Air Force

      (7)   The Air Force Headquarters

      (8)   The Operations Fleet Headquarters

      (9)   The Tactical Air Command Headquarters

   b. General Staffs

      (1)   The Secretariat Department

      (2)   Directorate of Joint Personnel

      (3)   Army Directorate of Personnel

      (4)   Naval Directorate of Personnel

      (5)   Air Force Directorate of Personnel

      (6)   Directorate of Joint Intelligence

      (7)   Army Directorate of Intelligence

      (8)   Naval Directorate of Intelligence

      (9)   Air Force Directorate of Intelligence

      (10) Directorate of Joint Operations

      (11) Army Directorate of Operations

      (12) Naval Directorate of Operations

      (13) Air Force Directorate of Operations

      (14) Directorate of Joint Logistics

      (15) Army Directorate of Logistics

(16)   Naval Directorate of Logistics

(17)   Air Force Directorate of Logistics

(18)   MOD Finance Department

(19)   Office of the SCHQ Comptroller

(20)   Office of the Army Comptroller

(21)   Air Force Finance Department

c.   Technical Staff (Logistics Support Group)

(1)   Armed Forces Survey Department Headquarters

(2)   Engineer Department Headquarters

(3)   Naval Dockyard Department Headquarters

(4)   Aeronautical Engineer Department Headquarters

(5)   Post Engineer Department Headquarters

(6)   Army Civil Engineer Department Headquarters

(7)   Directorate of Joint Communications Headquarters

(8)   Army Signal Department Headquarters

(9)   Air Force Signal Department Headquarters

(10)   Naval Communications Department Headquarters

(11)   Army Ordnance Department Headquarters

(12)   Naval Ordnance Department Headquarters

(13)   Air Force Ordnance Department Headquarters

(14)   Army Transportation Department Headquarters

(15)   Naval Transportation Department Headquarters

(16)   Air Force Transportation Department Headquarters

(17)   Army Quartermaster Department Headquarters

(18)   Naval Supply Department Headquarters

(19)   Air Force Quartermaster Department Headquarters

(20)   Army Medical Department Headquarters

(21) Naval Medical Department Headquarters

(22) Air Force Medical Service Department Headquarters

(23) Army Veterinary and Remount Department Headquarters

(24) Army Science Department Headquarters

(25) Naval Science Department Headquarters

d. Special Staffs

(1)   King's Aides-de-Camp Department

(2)   Judge Advocate General's Department

(3)   Defense Energy Department

(4)   Military Industrial Department

(5)   Army Preserved Food Division

(6)   Armed Forces Adjutant General's Department

(7)   Army Adjutant General's Department

(8)   Naval Adjutant General's Department

(9)   Air Force Adjutant General's Department

(10) Army Provost Marshal General's Department

(11) Army Inspector General's Department

(12) Naval Inspector General's Department

(13) Air Force Inspector General's Department

(14) Army Finance Department

(15) Naval Finance Department

(16) Army Special Services Department

(17) Naval Welfare Department

(18) Air Force Special Services Department

(19) Naval Hydrographic Department

(20) Naval Meteorologival Department

(21) Air Force Civil Aviation Department

e. Training and Education Staff

    (1)   Directorate of Education and Research

    (2)   Army Training Command Headquarters

    (3)   Naval Education Department Headquarters

    (4)   Air Force Directorate of Education and Training Headquarters

    (5)   Office of the Supreme Commander

    (6)   Naval Senior Officer School Headquarters

    (7)   Air Force Flight Training School Headquarters

f. Veteran Activity Support

    (1)   World War I Veteran Association

    (2)   Veteran Welfare Organization

g. Computer Activities

    (1)   Computer Center, Office of the SCHQ Comptroller

    (2)   Computer Section, Air Force Finance Department

h. Compensations and Legal Contingencies

    (1)   Office of the Under-Secretary of State and Office of the Secretary of the Minister

    (2)   Supreme Command Headquarters

    (3)   Army

    (4)   Navy

    (5)   Air Force

i. Other Essential Activity Support

    (1)   Secret Service Activities

        (a) Office of the Under-Secretary of State

        (b) Supreme Command Headquarters

        (c) Army

        (d) Navy

        (e) Air Force

(2)   Army Television Station Support

(3)   Subsidy of the Armed Forces Medical
        Society of Thailand.

LIST OF REFERENCES

1. Novick, David, ed., _Program Budgeting: Program Analysis for the Federal Budget_, p. 4, U. S. Government Printing Office, 1965.

2. Haveman, R. H. and Margolis, J., ed., _Public Expenditures and Policy Analysis,_ p. 485-492, Markham Publishing Company, 1970.

3. Tucker, S. A., ed., _A Modern Design for Defense Decision: A McNamara-Hitch-Enthoven Anthology_, p. 67-68, Industrial College of the Armed Forces, 1966.

4. Tucker, S. A., ed., _A Modern Design for Defense Decision: A McNamara-Hitch-Enthoven Anthology_, p. 71, Industrial College of the Armed Forces, 1966.

5. _Five Year Defense Program Structure Handbook (7045.7-H)_, revised ed., p. 3-4, Department of Defense, 12 January 1971.

6. Moyer, B. B., Jr., _Evolution of the PPB in DOD_, NMCS Handout, p. 3-7, 9 February 1973.

7. _RTARF Planning, Programming, and Budgeting System_, Handout, p. 9, the Comptroller's Office, Supreme Command Headquarters.

8. _RTARF Planning, Programming, and Budgeting System_, Handout, p. 11, the Comptroller's Office, Supreme Command Headquarters.

9. Tucker, S. A., ed., _A Modern Design for Defense Decision: A McNamara-Hitch-Enthoven Anthology_, p. 161, Industrial College of the Armed Forces, 1966.

10. Quade, E. S. and Boucher, W. I., ed., _Systems Analysis and Policy Planning: Application in Defense_, p. 2, the Rand Corporation, 1968.

11. Haveman, R. H., and Margolis, J., ed., _Public Expenditures and Policy Analysis,_ p. 425, Markham Publishing Company, 1970.

12. Tucker, S. A., ed., _A Modern Design for Defense Decision: A McNamara-Hitch-Enthoven Anthology_, p. 162, Industrial College of the Armed Forces, 1966.

13. Tucker, S. A., ed., _A Modern Design for Defense Decision: A McNamara-Hitch-Enthoven Anthology_, p. 178-183, Industrial College of the Armed Forces, 1966.
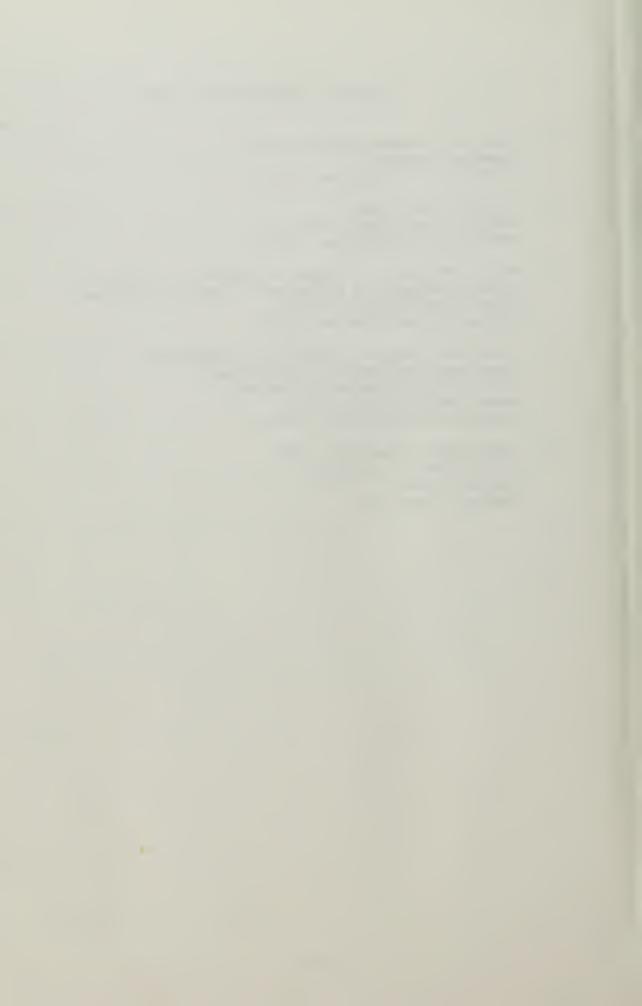
14. Quade, E. S. and Boucher, W. I., ed., <u>Systems Analysis</u>
    <u>and Policy Planning: Applications in Defense</u>, p. 12,
    the Rand Corporation, 1968.

15. Lyden, F. J. and Miller, E. G., ed., <u>Planning-Programming-</u>
    <u>Budgeting: A System Approach to Management</u>, 2d ed.,
    p. 252-253, Markham Publishing Company, 1972.

16. Tucker, S. A., ed., <u>A Modern Design for Defense Decision:</u>
    <u>A McNamara-Hitch-Enthoven Anthology</u>, p. 164-165,
    Industrial College of the Armed Forces, 1966.

INITIAL DISTRIBUTION LIST